

ISSTIP JOURNAL

NUMBER 11

ISSN 1478-1204

July 2002

Editor:
Carola Grindea

Assistant Editor:
Suzanna Widmer

Editorial Address:
28 Emperor's Gate
London SW7 4HS

Tel. 020-7373-7307
Fax 020-7373-5440
e-mail
<carogrindea@yahoo.com>

ISSTIP JOURNAL
Free to members

Copies of ISSTIP JOURNAL
Nos 1-10 at £3.50 per issue

ISSTIP MEMBERSHIP
Full membership £16.00
Students £5.00

Members of ISM, EPTA, ESTA
or similar Associations £10.00

Published by ISSTIP
International Society for Study of
Tension in Performance

Printed by
Burchell Design and Print
Littlehampton, West Sussex
Tel. 01903 717633

CONTENTS

Editorial	2
Mayhem for Music <i>Prof. Earl Owen</i>	4
A comparison of the incidences of peak emotional experiences triggered by gentle and rousing music <i>Dr. Mike Lewis and Colin Touching</i>	7
Book Reviews	14
The Role of the Thumb <i>Carola Grindea</i>	17
Performance nerves and tension, <i>John W.Duarte</i>	20
Musicians and Anxiety, <i>Allessandra Cartocci</i>	22
Musicians Injuries, <i>Dominique Royle</i>	25

The First UK
CERTIFICATE COURSE
to train 'Music Medicine Therapists'
to bring **MUSIC MEDICINE** at par with **SPORT MEDICINE**

6 October 2002 - 15 June 2003
London College of Music and Media
St Mary's Rd, London W5 5RF

Course Director: Carola Grindea

Medical Specialists

Dr C.B.Wynn Parry Adviser, Medical Studies, Mr D.Garfield Davies,
Mr Tom Harris, Prof Rodney Grahame, Prof Michael Swash, Prof Raoul Tubiana

Dr Trevor Silver, Dr Kenneth Lewis

Musicians Carola Grindea, Peter Feuchtwanger, Karen Sell, Penelope Roskell
Psychologists Andy Evans, Prof Paul Lehrer, Lucinda Macworth-Young

Physiotherapists, Yoga, Feldenkrais, Alexander,
other therapists

Prof Malcolm Troup, Adviser

Details and Brochure from Course Administrator Goli Mohtadi

email <goli_mohtadi@hotmail.com>
or from ISSTIP

Editorial

Carola Grindea

ISSTIP's pioneering work continues. We are proud to announce that the first One Year CERTIFICATE COURSE in the UK to train 'Music Medicine Therapists' will start in October 2002 also at the London College of Music and Media where the 'Performing Arts Clinic' has been very active for the past eleven years.

While Sports Medicine is highly developed not only in the UK but throughout the world, Music Medicine is still in its infancy and it is hoped that this imbalance may be rectified in the near future.

The enormous interest and excitement which this course is creating has surpassed all expectations. The articles published by 'BBC 'On Line', Music Journals (CLASSICAL MUSIC, PIANO, ISM Music Journal), Medical Journals ('General Practitioner', 'British Medical Association' NEWS), Physiotherapists Journal 'FRONTLINE', have brought a spate of enquiries. Many musicians - performers, teachers, students, medical practitioners and physiotherapists, some of them involved in music making as a hobby, have expressed their interest and are very excited that such training will be available. Although the COURSE starts only in October 2002 several have already enrolled to make sure of a place.

The COURSE offers a variety of topics to be studied in depth under the guidance of medical specialists, musicians, psychologists, physiotherapists and also teachers of Yoga, Feldenkrais, Alexander, Pilates.

On the Faculty:

Medical specialists: Dr C.B.Wynn Parry, Consultant/Adviser at both ISSTIP and BPAMT Performing Arts Clinics, Mr D. Garfield Davies (ENT Surgeon), Mr Tom Harris (ENT Surgeon), Prof Rodney Grahame (Rheumatologist), Mr Ian Winspur (Hand Surgeon), Dr Michael Swash (Neurologist), Prof Raoul Tubiana (Orthopaedic Surgeon, France), Dr Trevor Silver (GP), Dr Kenneth Lewis (GP).

Musicians: Carola Grindea, Course Director, Professors Malcolm Troup, Peter Feuchtwanger, Karen Sell, Phyllis Lehrer (USA).

Psychologists: Andy Evans Director of Studies, Prof Paul Lehrer (USA), Lucinda Mackworth-Young

Physio/kinesi-therapists: Philippe Chamagne (France) Dominique Royle, Katherine Butler

Osteopaths: Garry Derrick, Simeon Neil Asher

Yoga: Penelope Roskell, **Feldenkrais:** (Alan Fraser), **Alexander:** (Elizabeth Langford)

Other important studies to be included are:

Physiology of Instrumental Techniques

Ergonomics - Interaction between player and instrument

The COURSE will start on 6 October 2002 and will end on **15 June 2003**

It will extend over 8 SUNDAYS - ONE SUNDAY a month- from 10.00 am to 4.00 pm

There will also be weekly WEDNESDAY Clinic Sessions from 4.00 to 6.00 pm

Participants will attend ONE SUNDAY a month and ONE WEDNESDAY a month.

Every participant will have to write a **DISSERTATION** (minimum 5000 words) on a topic approved by the Faculty - which should include an in-depth Study of at least ONE CASE.

FEES: £195 Members £220 Non Members
£95 Students, Concessions (LCMM Students FREE)
Registration by **5 September 2002. (15% increase after that date)**

The COURSE is at LCMM - London College of Music and Media – Thames Valley University, St Mary's Rd, London W5 5RF (Part Time Studies Department, Director Peter Cook)

Goli Mohtadi is the Course Administrator and *Jackie Reiter* and *Gil Sharp* are advisers.

Lana Bezanov, LB Promotions, will help with Public Relations. email <info@lbproms.co.uk>

www.lbproms.co.uk Tel 020 7736 4717
Fax 020 7731 9009

ISSTIP INTERNATIONAL FORUM takes place on **28 July 2002 (2.00 -7.30pm)** at **Trinity College**, in the Old Royal Naval College, Greenwich

Well known musicians, medical consultants and therapists specialising in 'Performing Arts Medicine' and psychologists will take part in the ROUNDTABLE Discussions on the CAUSES, THERAPY, PREVENTION of the many physical and psychological problems and injuries of musicians.

On the Panel: Dr C.B.Wynn Parry, Mr D Garfield Davies, Dr John Mathews, Andy Evans, Prof Paul Lehrer (USA), Prof Penelope Roskell, Paul Anders Sogaard, Prof Hilary Jones, Dominique Royle, Nina Finburgh. In the Chair: Prof Malcolm Troup

Workshops: John Duarte 'Guitarists Problems' and Phyllis Lehrer 'Inner Game for Pianists'

'Performing Arts Clinic' - conducted by Carola Grindea.

We wish to thank this year's sponsors: *Dan Mayer* (Paris), *Ralph Kohn* (Kohn Foundation), *Martin Dunitz Publishing Co*, *Prof Gwyneth George*. Also the *Royal Society of Musicians* for their continuous support.

Fees: £20 - Members ; £25 - Non Members ; £10 - Students, Concessions.

The constant increase in the number of musicians suffering from physical and psychological dysfunctions continues to be the great concern of many musicians and medical specialists as well as of the Institutions which train instrumental and Voice Teachers.

RSAMD has established a new Programme of Research into the various projects dealing with this type of problems so that their students will be able to research the therapies successfully used so far and especially how such problems can be prevented. (Head of Research Celia Duffy; assisted by Hilary Jones)

The KURT- SINGER INSTITUTE, Directors Professor Heide Götz and Dr Helmut Moller, has been launched at the Berlin Academy of Arts, offering consultations, advice and treatment to musicians.

Research Projects are undertaken in many Music and Psychology Faculties and in Music Colleges where students are encouraged to study the problems afflicting musicians, as well as the stress and anxiety in performance.

ISSTIP would like to hear from the young researchers and we would like to publish some of the outlines of their projects which should be of interest to our members and to other students.

We wish to remind our members that ISSTIP features widely on the INTERNET. We have our own web <isstip.com> thanks to our member Stephen Rodman but this is not yet completed. Art Zegelaar has set up the ISSTIP web with full information at isstip@artsound.com

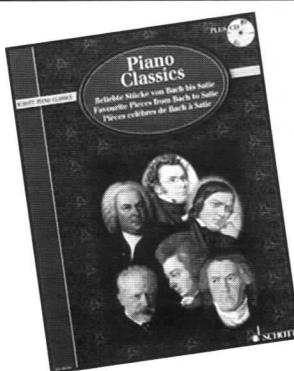
We are happy to announce that our colleague Paul Anders Soogard set up his web <pasguitar@aol.com> where you can find details of ISSTIP activities. The web <Musiciansgallery.com/health> continues to support ISSTIP.

THE TEN COMMANDMENTS FOR REDUCING STRESS

1. Thou shalt NOT be perfect, nor even try to be
2. Thou shalt NOT try to be all things to all people
3. Thou shalt leave things undone that ought to be done
4. Thou shalt NOT spread thyself too thin
5. Thou shalt learn to say "NO"
6. Thou shalt schedule time for thyself, and thy supportive network
7. Thou shalt switch off, and do nothing regularly
8. Thou shalt be boring, untidy, inelegant and unattractive at times
9. Thou shalt NOT even feel guilty
10. Especially, thou shalt NOT be **thine own worst enemy, but be thy best friend.**

NEW ADDITIONS TO THE

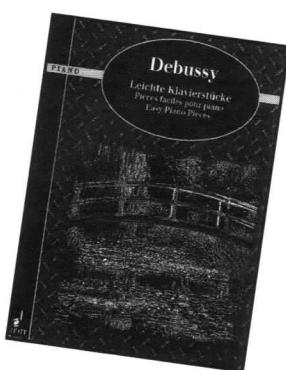
SCHOTT PIANO CLASSICS SERIES



New and proven piano editions from Bach to Satie

- available at affordable prices
- with attractive four-colour covers
- in quality engravings and faithful editions
- with short introductions in English, French and German

Titles include:



Favourite Pieces from Bach to Satie
edited by Karin Germér and Hans-Günter Heumann
Book + CD
ED 9036 £10.50

Carl Czerny
6 Sonatinas
Op. 163
Edited by David Patrick
ED 9035 £7.75

Claude Debussy
Easy Piano Pieces
Edited by Wilhelm Ohmen
ED 9034 £8.50

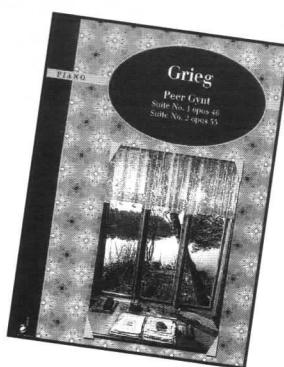
Edvard Grieg
Peer Gynt Suites
No. 1, Op. 46 und
No. 2, Op. 55
Edited by Frederike Becker-Vinçon
ED 9033 £7.75

SCHOTT

Joseph Haydn
10 Easy Sonatas
Edited by László Szélényi
ED 9026 £7.75

Franz Liszt
Litanie de Marie
Edited by István and László Szélényi
ED 9030 £5.75

Leopold Mozart
Notebook for Nannerl
Edited by Stefan Simon
ED 9006 £6.50



Erik Satie
Piano Works III
• Pièces froides
• Descriptions automatiques
• Embryons desséchés
• Avant dernières pensées
Edited by Wilhelm Ohmen
ED 9028 £6.50
Also available
Volume I ED 9013
Volume II ED 9016

Available at all good music shops send for further details
www.schott-music.com

48 Great Marlborough Street, London W1F 7BB. Tel: +44 (0)20 7437 1246 Fax: +44 (0)20 7437 0263

Mayhem from Music

Professor Earl Owen, A.O., M.D., D.Sc., F.R.C.S., F.R.A.C.S., F.I.C.S.

In the Oxford Dictionary: MAYHEM is defined as:

"Crime of maiming a person so as to render partially or wholly defenceless."

That music can maim you when you play your instrument lovingly, cleverly, beautifully, passionately, repeatedly, "just as your teachers taught you to" – is a SHOCK that comes to many instrumental musicians.

I am consulted by far too many wonderful musicians who have developed difficulties both physical and mental — from annoying pains and aches to severely debilitating career threatening conditions – just as a result of the way they play so wonderfully.

I first realized something completely wrong could happen just by playing music when a good friend of mine, also aged eight, was learning what were considered hard piano pieces from our teacher at school. He suddenly developed severe pain in his forearms and he eventually had to give up playing the piano.

The doctors called it "Tenosynovitis" and treated him with rest and painkillers which didn't cure him. Later when Cortisone was more available, and medically fashionable, he was given it too, but without curative effect. In retrospect I now realize that he was growing very fast at the time, and becoming the tallest boy in our class. He was going through a "growth spurt", where the long bones everywhere elongate, so that tendons of the forearms have to elongate too as the fingertips get further and further away from the elbows. Increasing playing causing more movements of heavier finger bones on heavier hands by the upper forearm muscles, (not yet grown stronger or more powerful to function effectively), was severely straining the long tendons, and their delicate extensor muscles, which virtually were seizing up from his practicing on the piano. This later would be labeled as "Repetitive Strain Injury", then even later "overuse syndrome".

So my friend and duet partner was in too much pain in his arms to play with me, or to even write with a pen. In the cruel way of children and even adults at that time, he was humiliated and scoffed at as "sissy" and it's a wonder he survived being told that he couldn't have all that trouble from playing the piano so he must be trying to avoid practicing!

In later life my concern for the sheer number of affected artists referred to me led to both a search for the reasons, and to evolving ways to help prevent this mayhem, due to active musicianship.

We know that musical instruments were not designed with due regard to human anatomy so that they could be comfortably played. They were designed to produce sounds, and without any reference to what, these days, is called 'ergonomics'.

Musicians are mostly devout stoics. They don't want to admit they have aches and pains when they play. They don't complain to their teachers when they are rapidly growing, vulnerable children, suffering in uncomfortable positions with incompletely developed muscles. This happens just at the time music is given to them to practice which is unsuitable for their stage of physical and technical development.

Teachers of more mature artists often fail to understand how the pupil's body differs from their own, so music that might suit

the teacher's hand span, muscle development and height could be an anathema to the pupil.

Many factors come into the production of what I call "musical mayhem", but it is clear that every successful orchestra and ensemble is in fact a collection of survivors, as are all performing soloists, because all instrumentalists are always at risk of damaging themselves, and need to understand what can happen, and how to avoid these injuries.

Since I first learnt to play the piano music has been a large part of my life. The early exposure to music made me use both my hands, and both ears, so that both sides of my brain had to learn together, and work together in concert with each other. This gave me an early and progressive aptitude using the motor and sensory areas of my cerebral cortex which, with practice, sharpened both my skills and appreciation of not only music, but life itself.

Perhaps instrumental musicians do develop a special appreciation (in the fullest sense of the word) for life as they certainly develop their devotion and empathy with music, using the fullest capacity of both sides of their brain. I believe that musicians also simultaneously enhance the emotional areas of both sides of their brain as they progress their musical talents, and I look forward to having the neuro-physiologists prove this in the future with their increasingly sophisticated technology.

As I observed two or three students a year dropping out of the Conservatorium of Music or our school music department due to hand and arm pain, it became obvious to me that, for some, the playing on any instrument could become painful or injurious, in both children and adults.

So what was happening? These players have been going along well without physical problems, but then either bit by bit, or suddenly they noticed difficulties of finger movements, or pains anywhere from fingers to hands to wrists to forearms to elbows and even to having back problems and headaches.

I thought back to when I studied anatomy as a medical student. In the days we actually dissected human bodies in a room at the University of Sydney's Anatomy Department, there were tables where up to twenty bodies were being dissected by future doctors in the clammily oppressive atmosphere of formaldehyde fumes. Interested in hands, I moved from my own forearm dissection to see how others were doing and found out that the anatomy of the bodies were not all the same. The muscles and tendons of the forearm were similar, but quite variable, and not exactly as depicted in the anatomy books. Some extensor muscles supplied only one finger, while in other bodies that one muscle mass was supplying two fingers or even three. This meant that to separately lift up (extend) one finger would be easy in the first case but difficult to do in the other where both fingers would raise when the muscle was acting on two tendons going to the two fingers. I also noted that some ligaments and pulleys in the anatomy of the hands were too tight or too thick to allow complete flexion and extension of some fingers, particularly the fourth or ring finger. In some hands there were only ligaments on one side holding down a tendon which allowed greater freedom of action from the other fingers in individual movements.

There is a hand condition which is called "Trigger Finger" where a flexor tendon is flexing a finger, but a thickening in the tendon (from long hard use of that finger) gets caught under one of its "pulleys" (thickened part of the fibrous tissue holding the flexor tendon in its sheath so it can slide smoothly). A Hand Surgeon can easily fix this by cutting the offending band allowing the thickened part of the tendon to slide back without becoming trapped again. Later in life I noticed that several musicians were coming to me with this condition. Then I noticed that musicians were also coming with other problems that could be due to their style of play or their anatomy, or their size and shape or posture, and became interested in quantifying this to investigate what might be the common denominations.

Here is a list, some thirty five years later, of only the commonest conditions I see that occur in instrumental musicians due to their profession, arranged according to their instrument. The commonest initial complaint is of pain, and pain is usually present in some form in all the suffering musicians.

PIANO & ORGAN

Weakness of hand and lack of co-ordination
Loss of speed, control, strength
Outside of elbow muscle soreness
Stiffness of fingers, particularly middle and ring
Hand muscle cramps
Temporary numbness of one or half of a finger
Wrist soreness
Tenderness on the hand inter-spaces between the fingers
Pain playing octaves, or scales in 3rds
Shoulder pains, aches and restricted movements
Hot feelings in tendons, swollen tendons

VIOLIN & VIOLA

Pain in left arm, shoulder, neck and hand
Different pains in right hand, arm, shoulder
Tender "Violinist's Spot" left side of back
Dystonia of a single finger activity
Weakness of muscle groups (hand, arm, shoulder)
Chin rest support problems
Characteristic pains in the neck
Cysts in the neck and chin on left
Permanent posture problems

CELLO

As for Violinists but surprisingly
MORE RIGHT BOWING HAND SYMPTOMS
(R) extensor muscle/tendon problems
(R) shoulder severe overuse, loss of control
Back problems from poor seating posture

DOUBLE BASS

As for CELLO but more finger trauma
Carpal tunnel syndrome. Cysts of wrist
Pain in right wrist, hand and shoulder

CLARINET, OBOE & SAXOPHONE

"Clarinetists Thumb" pain, swelling
Hands tired, sore, weakening
Embouchure difficulties
Right hand finger and tendon problems
Right shoulder cuff tenderness, pain
Right forearm pain, stiffness
Right wrist flexor cramps

BRASS

Contractures of hand fascial layers
Hunching of shoulders sequelae
Right wrist pain
"Trombonists left shoulder" problems
Wind development problems

FLUTE

Left shoulder hunching
Hand and index/thumb problems
Wrist stiffness
Wind development problems

GUITAR

Sore stiff elbows
"Soft" finger problems early on
Finger sore, stiff, tingling
Neck and back pains

TYMPANI

As for piano and
Wrist stiffness, soreness
Muscle origins soreness
Forearms more than hands
Pronation/Supination pain

There are some orchestral compositions that are the cause for orchestral section players to feel hesitant to play "all out" for conductors at rehearsals or actual performances because of that piece's toll on their bodies. Some pieces are particularly devastating on some artists, shown up as their remarks to me that "Ravel's Je Deaux ruined my hands", "Sweetlink's Toccata finished me off playing the organ", and "would you give me a Sickness Certificate as I am not up to playing Berlioz's string marathon all night". In some orchestras we see members play at the rehearsal, then phone in later, before the performance, that they couldn't manage to play that piece again that same day as it would be too injurious.

Pianists and violinists make up most of the patients but every single instrument causes casualties. It is no crime to have heavy instruments supported, after all we don't ask pianists to balance the piano on their knees! So why should the woodwinds or brass players feel embarrassed having their heavy instruments supported on stands, spikes or slings?

As a general rule I find that those people who always have held their pens in tight, stressed fashion are far more prone to develop muscle and tendon musical injuries. This is noticeable in left handed people, who have had to use their pens in a cramped backhanded way since learning to write. I recognise a severe form of pen holding which I call the "death grip" which really does later seize up muscle activities in hand and forearm.

Certain sports in girl's and boy's schools are guilty of inflicting injuries that seriously affect musicians later lives. Netball in girls and rugby in boys are the greatest offenders as fingers and wrists get severe twisting trauma, (bend backs), damaging growing ligaments with sequelae occurring in later life associated with high musical overloads.

Innocent as it may at first appear, gardening is a dangerous activity for professional musicians. Stiff implements such as secateurs or clippers, especially one handed models, can and do cause muscular and tendinous traumas to the occasional enthusiast. Gloves must be worn for gardening activities, as cuts and scratches on musicians fingers and hands can be debilitating and can easily get chronic infections.

In examining most of the musicians from over a dozen major orchestras and many other violinists I believe there is a condition I call "VIOLINIST'S SPOT" which is almost universal in any violinist who has been playing for over 20 years. At the upper third of the back on the left side between the inside edge of the scapula and the spine is a tender-to-pressure spot in the Rhomboid major muscle. The prolonged contraction of some muscle fibres for hours on end is necessary to maintain the stability of the violin or viola position whilst playing. Any fixed muscle mass, in this case the Rhomboids, (but with other instruments it could be the shoulder muscles in say the woodwinds or brass) will jeopardize the blood flow in these muscles and cause damage to their cells which rely on occasional movements to shift their waste products away after contraction.

Certain members of the musical fraternity are in a privileged position regarding their avoidance of Musical Mayhem. Foremost amongst these are conductors, who are in the enviable position of standing up and moving around while emoting at the same time as they are expressing their personality and will upon all the orchestral players. This combination of exercise, emotional release and the exhilaration of achievement seems to ensure that conductor lead long lives indeed.

Some protection against forearm and hand Musical Mayhem is associated with people described as "nuggety". These people have short forearms with more muscle bulk and shorter tendons than do taller, long limbed musicians. (The Ruggiero Ricci rather than the Paganini type of violinist).

Musicians with small hands and narrow hand span (distance from thumb tip to little finger tip in outstretched hand) are at far greater risk of muscle/tendon mayhem, and should choose their instrument carefully. Parents and teachers should recognise that certain instruments can be quite unsuitable for such hands. Some pianists have had their hand span extended by severe exercises, and others even had operations involving breaking and resetting of the bones of the little finger to make it stretch the octave!

Talented children are sometimes relentlessly exploited by teachers and can also be exploited by parents, leading to one seeing complex situations causing music mayhem. As a concerned human being one observes the ongoing psychological damage proceeding, while at the same time as one acts as a Doctor and treats the symptoms of overuse of frail developing tissues. One cannot, however, easily prevent

the greedy manipulation and waste that such selfish activities promote.

In the olden days orchestras too were not as exploited with heavy schedules, and it was unusual for their players to be on such a treadmill of performances as are today's instrumentalists. To prevent instrumental musicians from early "burnout" from over activity of their finely balanced muscles and minds, it is essential for musicians to avoid overdoing it. You are not alone, as I estimate that 60% of all performing instrumentalists are now carrying injuries caused by the way they play. (Data from my surveys).

Conclusion

The body has both fixed and moving living parts, and both play co-operative roles in the anatomical concert of movements which produce the sounds that we recognise as music. This can be done harmoniously or harmfully. Musicians should appreciate how the use of positive relaxation, avoidance of tension, correct breathing, healthy life styles and thoughtful playing positions will lead to a longer trouble free playing life.

It's worth taking the time to see how YOU could prevent your own style of playing your own instrument from causing you your own MUSIC MAYHEM.

Biographical Note

Earl Owen, acknowledged "Father of Microsurgery" and well known as a pioneer of finger and limb replantation surgery, and the man who led the surgical team who did the world's first Hand Transplantation and then the first Double Hand Transplantation in France recently, started out in life to be a concert pianist. Winner of a competition to train under Solomon he eventually did come to London from Sydney, but it was mainly for postgraduate surgery. Eight years later, as a Hunterian Professor of the Royal College of Surgeons, he returned to Sydney setting up the world's first Microsurgery Centre, and also starting a clinic to assist the medical problems of instrumental musicians. He has helped many artists to resume their careers, and famous musicians, ensembles and Orchestras have supported his Microsearch Foundation of Australia with donated concerts in such places as Sydney's famous Opera House, where the audience, in all 5 halls, sit comfortably and correctly on chairs that he designed.

Holiday Music
presents

SUMMER MUSIC at WELLS CATHEDRAL SCHOOL
PIANO/CHAMBER MUSIC COURSE
15th - 18th AUGUST 2002

For pianists and other instrumentalists
Making Music in any combination

Interpretation / Technique/ Ensemble Workshops led by Muriel Levin and John Sharp
Guest Tutor: **Carola Grindea**

Group Sessions studying Creativity and Grindea Technique

Further Details: Holiday Music Tel/Fax 020 8947 5538

A comparison of the incidences of peak emotional experiences triggered by gentle and rousing music

Michael J. Lowis* *Psychology Division, University College Northampton, England*

and

Colin Touchin *Director of Music, University of Warwick, England*

Abstract

Maslow (1962) stated that peak emotional experiences can be triggered *inter alia* by music. Seventy-four college staff members, from a population previously surveyed for incidences of such experiences, listened to recorded selections of gentle and rousing music, and logged the timings of any peak events they experienced. An attempt was then made to identify and analyse points in the music that had triggered high incidences of peaks, such as changes in harmony, key or dynamics. Although there were individual differences, at the macro level the recorded peaks during 25 to 30 minutes of gentle music revealed an alternating high-low response pattern between different pieces, but such a trend was less obvious with upbeat items. Some reasons for these findings are suggested. The results may have value for those who use music for healing purposes, for example music therapists, and for composers or compilers of music programmes who need to anticipate listener reaction.

In this study, an attempt was made to identify characteristics of musical compositions that were found to result in high incidences of emotional "peaks" when played to participants under controlled conditions, and to explain what might have caused such reactions.

Anomalous or numinous events and heightened states of consciousness have occurred, particularly in religious contexts, from the earliest of times (see for example Lester, 1996). The concept of "peak experiences" as explored in the present study, was primarily taken from reports by Maslow (1962; 1964; 1971) that self-actualising individuals (those who have achieved their perceived maximum potential, but desire to progress still further) *inter alia* tended to report such events. These experiences were variously described by Maslow as: moments of great awe, a feeling of oneness with the world, seeing the ultimate truth, the definitive satisfaction of vague, previously unsatisfied yearnings, stepping into heaven, being lost in the present, or being detached from time and place.

Maslow (1962) suspected that peak experiences occurred in practically everybody, although are not always recognised as such, and subsequent research by others has generally confirmed that these are relatively common occurrences (e.g. Goldstein, 1980; Kokoszka, 1992). An earlier phase of the present study, carried out on college staff members, revealed that 85% of the 364 who responded admitted to at least one experience described in terms similar to those used by Maslow (Lowis, 1998).

Maslow (1962; 1971) believed that peaks could originate from a variety of activities, but that one of the most frequently implicated was music (the classical variety). He commented that some individuals could count on certain pieces of music to help (but not guarantee) trigger a peak experience. Music has been described as "the language of feelings" (Gabrielsson,

1993), and research subsequent to Maslow's pronouncement has confirmed the importance of music as an antecedent or trigger for experiences that can be subsumed under the descriptive "peaks" (Greeley, 1974; Csikzentmihalyi, 1975; Goldstein, 1980). The study on college staff (Lowis, 1998) required participants to state what they were doing if and when they had a peak experience, under each of two conditions: whilst performing a task ("active"), and whilst relaxing or meditating ("passive"). Playing a musical instrument was cited by 11.8% of respondents as an antecedent in the active condition, but this rose to 55.1% for listening to music whilst in the passive state.

Why music can induce profound emotional reactions in the listener is far from clear, although *Arousal Theory* might offer at least a clue. Berlyn (1971) suggested that aesthetic patterns (including music) "... may give pleasure both through arousal increase and closely following arousal reduction" (p.92). He added that arousal could be raised by properties such as novelty, surprisingness, complexity, ambiguity, and puzzlingness. Trehub and Schellenberg (1995) mentioned that music contains tensions and resolutions – the ebb and flow of feeling. North and Hargreaves (1996) suggested that the relationship between musical complexity and listening pleasure followed an inverted-U pattern of intensity, but that presumably this was dependent upon the listener's level of musical sophistication and training.

This notion of arousal is in keeping with observations that physical and psychological manifestations such as increased blood pressure, respiration and pulse rates along with tears, shivers, tingles and lumps in the throat can occur during significant moments in music (Sloboda, 1991; Storr, 1993; Aldridge, 1997)). Similar reactions were reported by some of the participants in the earlier phases of the present study (Lowis, 1998). Panksepp (1985), however, found that sad music evoked more of what he termed "chills" among his participants, than did the happy music, although his study used vocal music, which introduced another variable into the equation.

Meyer (1956) believed that music arouses expectations (conscious and unconscious), which may or may not be immediately satisfied. This can even apply to a familiar piece, as the listener then "plays the game" of withholding knowledge of the aesthetic outcome. He added that, following the basic principles of Gestalt theory, we as listeners continually strive for completeness and closure. Winner (1982) believed that composers deliberately violate expectations, and Krumhansl (1996) observed that musical meaning and emotion depended on the way music plays against these expectations. Performers also add to the equation by varying such elements as tempo, dynamics and timing in their playing in order to convey musical expression (Gabrielsson & Juslin, 1996; Sloboda, 1998a; 1998b).

AN EXCITING AND AWARD-WINNING VIDEO GUIDE

FREEING THE CAGED BIRD

DEVELOPING WELL-COORDINATED, INJURY-PREVENTIVE PIANO TECHNIQUE
WITH
BARBARA LISTER-SINK

"Not everyone is a Rachmaninoff or a Rubinstein! I am sure that Freeing the Caged Bird will be of immense help to many pianists . . . will make their lives easier and their piano playing more satisfying. A monumental work!"

— Vladimir Ashkenazy

- Exploration of piano and body mechanisms
- Step-by-step training program, from beginning to advanced levels
- Potentially harmful technical habits • How to avoid accumulating tension
- Playing examples on all levels. Slow-motion analysis of movement

To order, send \$50 (bank cheque or money order in American dollars) to
WINGSOUND™ • PO Box 10912, Winston-Salem, NC 27108
TEL/FAX 336/945-2304



WEB SITE www.freeingthecagedbird.com • EMAIL swallow@salem.edu



The Royal Society of Musicians of Great Britain

FOUNDED 1738

INCORPORATED BY
ROYAL CHARTERS 1790 & 1987

Registered Charity Number 208879

The Royal Society of Musicians was founded by Handel and others to support professional musicians and their families when in distress because of illness, accident or old age. Its charitable work has continued, responding to increasing need and acting swiftly in cases of emergency.

*If you know a musician needing help
please let us know at once.*

*If you wish to help us
please send a donation or arrange for a deed of covenant or legacy.*

For details please contact:
The Secretary
The Royal Society of Musicians
of Great Britain
10 Stratford Place,
London W1C 1BA
Telephone: 020 – 7629 6137

Certainly within Western musical styles, some basic musical techniques that can result in emotional responses have been suggested. Shutter-Dyson and Gabriel (1981) mentioned major modes (happy), minor modes (sad), slow tempi (dignity and calm), fast tempi (happy and exciting), high pitches (sprightly and humorous), and low pitches (sad and dignified). Sloboda (1991) reported on emotional experiences to, for example appoggiaturas (provoked tears), or earlier than expected changes in harmony (provoked shivers). Other features, such as descending fifths and the entrance of a female voice, were cited by Waterman (1996). Krumhansl (1996) conducted trials where participants continuously self-rated perceived tension whilst listening to a Mozart piano sonata. Tension was found to be strong at the ends of musical sections, during increases in dynamics, harmonic dissonance, denial of intraopus style, chromaticism, breaks in patterns of harmony, and certain aspects of melodic contour.

In the present phase of the study, we were guided by the hypothesis that specific characteristics of the composition or performance of selected stimulus music ("micro level" features), and the dynamic contour of a longer piece or programme ("macro level" features), could be identified that coincided with significant incidences of reported high emotional experiences.

Method

Participants

The participants comprised 41 women and 33 men from an original pool of 364 staff members of a British university college. They had been involved in earlier phases of the study, and many details of them were already on file. The present group was considered to be reasonably representative of the national adult population with regard to age (under 21 to 61-70 years) and marital status (63.5% living with spouse/partner, 23% single, 10.8% divorced, 2.7% widowed). There was, however, a marked positive bias in educational level with some 53% having university degrees. Scores obtained on a short questionnaire designed to measure importance of music in one's life were also skewed to the higher end of the scale. Finally, it was known that 93.2% of the participants had previously admitted to at least one peak experience (usually multiple) as defined, and that music was the most frequently cited trigger.

Musical selections

Two audiotapes comprising 25 to 30 minutes of pre-recorded classical music were prepared using high quality tapes and equipment. One selection was designated "gentle" and the other "upbeat". In selecting the items, we decided not to include any vocal music on the grounds that it would provide additional stimuli in the form of both words (and their associations) and of human voices, either of which could mask any result where instrumental music alone might have triggered an emotional response in the listener.

The gentle music selection comprised six pieces of generally relaxing, slow or meditative mood, and a balance was struck between Classical and Romantic works that might be somewhat familiar to a reasonable proportion of the participants. This was partly so that the listeners would feel more at ease with music that was not completely foreign to them, and partly to enable them to record responses that may have been stored from any previous hearings. The composers for these pieces were: Elgar, Mozart, Rodrigo, Schubert, Mahler, and Rachmaninov. There were nine items in the

upbeat selection, chosen because of their rousing nature and dynamics. The composers were: Wagner, Bach, Copland, Mendelssohn, Janacek, Sibelius, Shostakovich, Rachmaninov, and Stravinsky. The orders of presentation of the pieces was fairly arbitrary, although an aim in making the selection was to move as naturally as possible from one size of ensemble (or one style) to another without any sudden jarring.

Procedure

Participants were seen individually, by appointment during working hours, on two occasions (to avoid boredom on the one hand, and emotional exhaustion on the other) separated by a mean of 65 days. They heard both tapes, one on each occasion, and the order of presentation was alternated between participants. Due to attrition, only 66 of the original 74 volunteers completed both sessions. The trials were conducted in a carpeted, sound-attenuated room that was windowless but ventilated, and with conditions being made as comfortable as possible with an easy chair and subdued lighting. Tapes were created and played on high quality stereo equipment, via loud speakers. A desktop computer was placed out of line of sight, and linked to this was a "joystick" handle with single button, which the participant held in his or her dominant hand. Pressing the button caused a pulse to be registered on a custom-written software programme as an elapsed time taken from a zero point synchronised to the start of the music.

Once the participant was settled, the music tape and computer programme were started simultaneously, and the operator then left the room. Taped instructions comprised firstly a request that the button should only be pressed if a moment of particularly deep and profound pleasure or joy had been experienced - the sort that produces a tingle in the spine. Further definitions were mentioned in terms of the peak experience descriptions (based on those of Maslow and others) cited earlier. It was emphasised that some individuals may not feel the need to press the button at all, and that they should not do so if the music was found to be just "normally" enjoyable. The instructions ended with a request to relax, breath deeply a few times, and close the eyes if desired. After a short pause, the music began.

When the music had ended, participants completed a short questionnaire which asked them to rate how familiar the selection as a whole had been to them, how enjoyable it had been, and whether or not the music had reminded them of a previous occasion. On completion of each trial, the elapsed times of button pressings were extracted and logged onto a computerised database, where analysis of the data could be carried out.

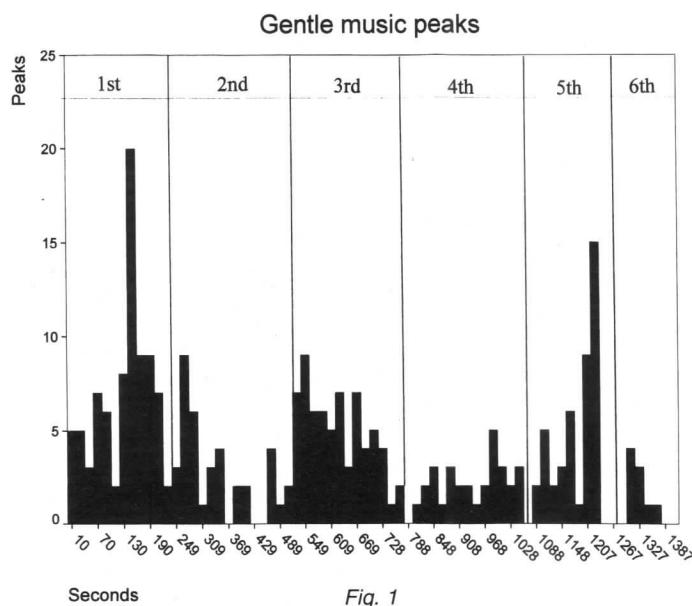
Results

It was found that 67.6% of participants pressed the button at least once during the gentle music selection, and 62.9% during the upbeat ($N = 71$). Participants who failed to press the button once during either session comprised 22.7% of the total ($N = 66$). The maximum number of events recorded by any one participant was 30 for the gentle music, but 42 for the upbeat. Although slightly fewer individuals pressed the button during the upbeat music than during the gentle selection, the mean number of events for the former (7.20) was significantly greater than it was for the gentle music (3.81) ($t = 2.53, p = .01, N = 70$).

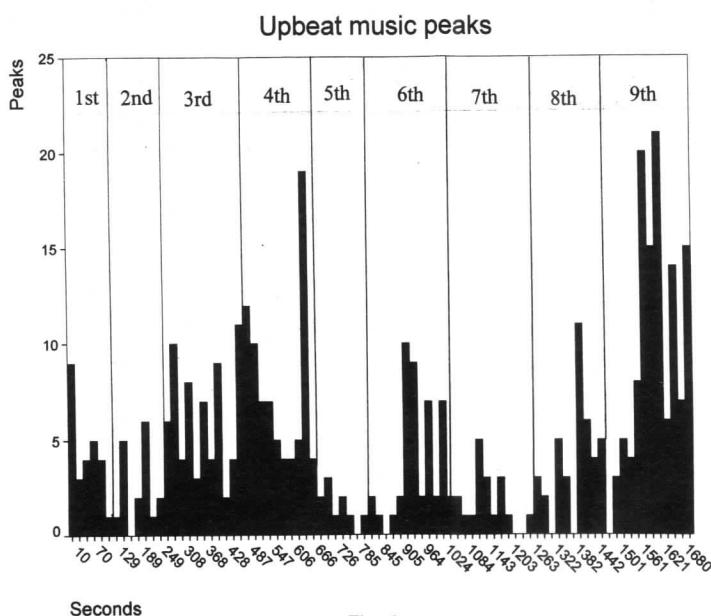
The overall mean familiarity rating for the pieces was 3.27 ($SD = 1.41$, maximum possible rating = 6.0). With both the gentle and upbeat selections, there were significant and positive correlations between the participants' rating of

familiarity with the pieces and enjoyment of them (gentle: $r = .46, p = <.01$; upbeat: $r = .37, p = <.01$), and between familiarity and the frequency of recording a peak event (gentle: $r = .27, p = .03$; upbeat: $r = .25, p = .04$). Although some 65% of the participants noted that the music had reminded them of a previous occasion, there were no significant correlations between this and the frequency of button pressing.

Histograms of the total number of events were created for each 20-second period of music. Because these could only include data from participants who did press the button at least once, the results represent a combination of recorded events from 46 individuals (gentle) and 45 (upbeat). The histograms are illustrated in Figures 1 and 2, and include markers for the start of each new piece of music, from selection two onwards.



Frequencies of peak experiences recorded by 46 individuals, during six consecutive selections of gentle music of 1,417 seconds total duration.



Frequencies of peak experiences recorded by 45 individuals, during nine consecutive selections of upbeat music of 1,710 seconds total duration.

It is apparent that fluctuations in the clusters of peaks along the timescale are present for both the gentle and upbeat selections. Whilst attempts to identify precise musical moments with accuracy is likely to be problematic, some observations are given below. Where possible, references to particular points on Figures 1 (gentle music) and 2 (upbeat) are included to indicate approximately where the identified musical feature appears.

Gentle Music

1) Elgar's "Nimrod": the intense swell toward the end of the piece could be regarded as a potential musical peak, but the responses of the participants clustered earlier at the halfway (first) climax (150 seconds).

2) Mozart's Adagio from "Serenade for 13 Wind Instruments": the measurable peak of responses here coincides with the moment described in the film *Amadeus*, by the character Salieri, as divinely inspired, when the oboe appears and floats over the underlying introductory texture (269 seconds).

3) Rodrigo's "Guitar Concerto", 2nd movement: musical moments can be identified where the guitar begins the theme (629 seconds), where the cello takes over (669 seconds), and during a bassoon phrase (709 seconds).

4) Schubert's "String Quintet", 2nd movement: responses to the slow movement show a gradual, though rather small, rise in appreciation, with a slight peak (888 seconds) where the music does take a dramatic turn into a sudden and dark minor section.

5) Mahler's Adagietto from "Symphony No. 5": a steady increase in response is evident, with a sudden peak (1,227 seconds) measured at the first significant fortissimo in the movement, a sustained long note in both first violins above the ensemble and below the bases..

6) Rachmaninov's "2nd Piano Concerto" ending: responses were neither numerous nor sustained but, due to the age of this recording, the technical quality was not up to the general standard of the other selections, and this was noted by some of the participants.

Upbeat Music

1) Wagner's "The Ride of the Valkyries": the immediate impact of this piece brought an expected and obvious response (10 seconds), but the rousing conclusion in this extract seems not to have elicited subsequent refreshment of this.

2) Bach's "3rd Brandenburg Concerto": a variable response, but with an identifiable peak (189 seconds) that coincided with a drop in the thickness of the musical texture, thereby producing a more translucent effect.

3) Copland's "Fanfare for the Common Man": percussive impacts of gong and bass drum, in-between the brass lines in each restatement, brought a surge of responses (see for example 269, 328, 368 and 408 seconds).

4) Mendelssohn's "Fingal's Cave Overture": an instant response (487 seconds), slowly fading but never completely going, and with a significant peak (646 seconds) apparently related to the first full orchestra fortissimo following the statement of both opening subjects.

6) Sibelius' "2nd Symphony": first significant peak occurred as the repeated theme dramatically begins a crescendo (925 seconds) and continued to excite over the remainder of the piece, which includes an opening of the minor key into the major.

7) Shostakovich's "10th Symphony": relatively few responses.

8) Rachmaninov's "3rd Piano Concerto": the highest peak (1,402 seconds) seems to coincide with the point where the deliberately "big" second subject is stated powerfully by the full ensemble and piano, prior to the predictable surge to the grand finish.

9) Stravinsky's "Firebird ballet Suite" finale: this piece generated the biggest response of all the selections, firstly indicated when the hushed horn solo leads to a sudden peak for the full orchestra statements (1,561 seconds). The final passage is rhythmically stirring and led to particularly high incidences of peaks at 1,621 seconds (quick, energetic music starts, plus key change), and 1,661 and 1,701 seconds (build to climax).

In order to aid analysis at the macro level, the total numbers of recorded peaks were computed for each of the two pieces in each of the musical selections (see Figures 3 and 4). Figure 3 appears to indicate a pattern of alternating high and low incidences of peaks, but with an overall downward trend. This effect is less evident from the contour of responses for the nine selections that comprised the upbeat selection (Figure 4), particularly in view of the rather low responses for the first two items. These are, however, followed by sustained interest in pieces three and four which together last for some seven and a half minutes, but then response to the fifth item was the lowest for this selection. This did not stop the incidence of peaks in the last item being the highest for any of the upbeat selections.

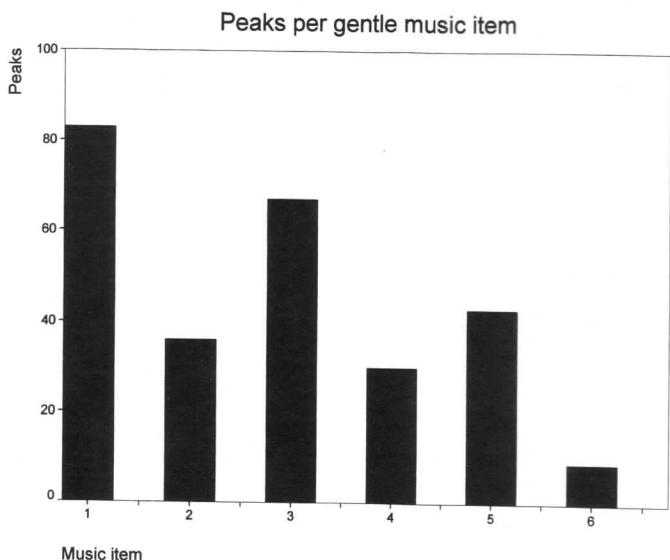


Fig. 3

Total peak experiences recorded by 46 individuals for each of six selections of gentle music.

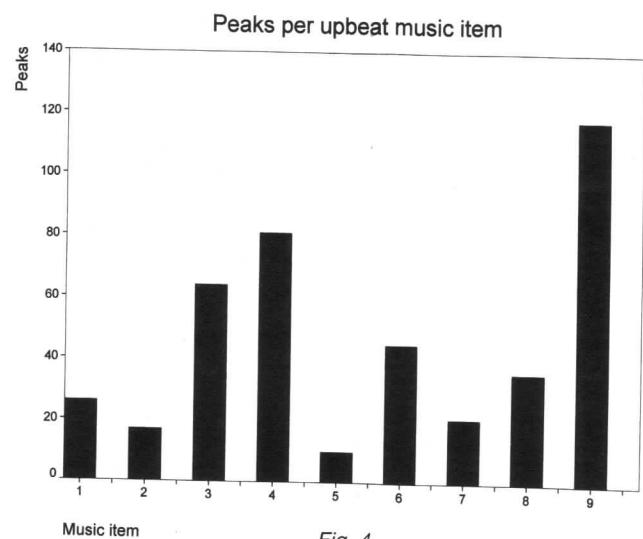


Fig. 4

Total peak experiences recorded by 45 individuals for each of nine selections of upbeat music.

Discussion

The main aim of this study was to try and identify characteristics of the musical compositions or performances, at both the micro and macro levels, which might coincide with the incidences of high emotional experiences reported by the participating listeners. Despite the potential limitations inherent in research of this nature, the analyses of the musical scores enabled some tentative suggestions to be made. With the gentle music, these included the start of an oboe feature (Mozart), the guitar beginning the theme (Rodrigo), and the first significant fortissimo (Mahler). With the upbeat selection, musical moments that coincided with increases of listeners' responses included impacts of gong and bass drum (Copland), full orchestra fortissimo (Mendelssohn), dramatic start of crescendo (Sibelius), powerful statement by full ensemble (Rachmaninov), and full-blooded climax (Stravinsky).

Such features are similar to those suggested by previous workers as being likely triggers for strong emotional responses (e.g. Shuter-Dyson & Gabriel, 1981; Sloboda, 1991; Krumhansl, 1996; Waterman, 1996). The results also agree with the findings of Goldstein (1980) that "thrills" correspond with peaks and valleys of the music, and with similar observations by Panksepp (1995) despite his overall finding that sad (vocal) music invoked more responses ("chills") than did the happy variety. The question of why musical technicalities like these have the effects that they do still requires discussion. Similarly there is the matter of whether composers deliberately select them with full intention to manipulate the emotions of the listener - as inferred by Stravinsky and others (Cooke, 1959; Storr, 1993), or whether they just concentrate on expressing their creative imagination in the score, leaving it to others to conduct post hoc structural analyses if they so wish.

The presentation of the results, illustrating as they do the frequencies of recorded peak experiences over 25 to 30 minutes of musical stimulus, are ideally formatted to allow comparison with the contours of the pieces in terms of dynamic and textural intensity over the same time span: that is, analysis at the macro level. In addition to variations in response patterns within a piece, as can be gleaned from Figures 1 and 2, the differences between the responses to whole selections are evident in Figures 3 and 4, most obviously in the case of the gentle music compilation.

Previous research on the effect of longer passages or selections of music is less evident in literature reports, than are references to musical moments at the micro level. Panksepp (1995) plotted "chills" reported by a small ($N = 10$) participant sample for each 20-second period of three contemporary vocal selections, and two of his charts revealed a similar downward trend of peaks and troughs to that suggested by the representation in Figure 3. However, Panksepp omitted to comment on this. Waterman (1996) recorded a continuous response by participants to the question "press the button when the music causes something to happen to you", during the playing of several pieces by classical and contemporary composers. However, his displays of results were used to examine differences between responses to individual bars of music. From this he identified structures such as descending fifths, voice entries and peak crescendos, as reported earlier (see also research cited by Aldridge, 1996, on specific musical intervals).

Huron (1992) noted that changing dynamics is a specific factor known to contribute to attention and arousal, but that the threshold is much smaller for increasing than for decreasing volume changes. He suggested that, in order to maintain orientating responses over the duration of a musical piece, it should be structured as a sequence of "ramps" where intensity increases are small but cumulative, but decreases are large and abrupt. This principle presumably applies equally to selections of shorter pieces, as is the case with the present study. The implication is also that it is impractical or impossible to keep increasing the loudness or manipulating any other attention-commanding pattern, without reaching a point of saturation in the listener which cannot be sustained for long and therefore requires, as does a muscle or nerve fibre, a refractory period before excitation can occur again. Gabrielsson (1993) commented that we might be "pre-wired" to respond emotionally to more "primitive" components of music, such as loudness and tempo.

Composers are no doubt aware of this, as the responses to pieces by, for example Elgar, Copland and Stravinsky, suggest. Whether or not the same would always apply to compilers of musical selections is uncertain. If there is little relief from the high levels of stimulation, individual pieces, which in other compilations might result in relatively high levels of emotional responses, may yield unexpected low reactions when sandwiched between other highly stimulating works. The undulating response patterns with the present gentle selections suggest this, as perhaps do the low incidences of peaks recorded for selections five and seven of the upbeat compilation.

This would not, however, satisfactorily explain the relatively low responses (except to the opening few seconds) of the first five minutes of the upbeat music, when compared with the following seven and a half minutes. The reasons for this are unclear; it may be that the pieces do not contain sufficient attention-grabbing variety to maintain or increase arousal within the listener. Perhaps other factors were at work, such as association of the music with previous hearings, or with events that were themselves emotional. Goldstein (1990) noted that "thrills" reported by participants whilst listening to music were sometimes associated with events or people in the listener's past; these could presumably be enhanced if this previous occasion was emotionally charged (Meyer, 1956; Trehub & Schellenberg, 1995; Saperston, 1995; Gabrielsson & Juslin, 1996). In the present study, about two-thirds of the participants responded "yes" to a post-intervention question on whether the music had reminded them of a specific previous occasion or event, but no significant correlations were

obtained between this and the frequency of recorded peak events.

The conclusions to be drawn from this study are mostly less specific than were anticipated. It has been shown that *some* pieces of music did trigger relatively high incidences of emotional experiences in the listeners, and an analysis of the musical moments did suggest some possible causes. However, *all* the pieces were included with the belief that they had the potential to generate emotional reactions in the listeners. Moderate arousal increase, and arousal reduction (Berlyn, 1971) - equivalent to an ebb and flow of feeling (Trehub & Schellenberg, 1995), could be involved at both the micro and macro levels of music listening. Perhaps the most intriguing finding at the macro level was the indication of an alternating high and low incidences of responses to the pieces in the gentle compilation. Whether the items *per se* were responsible for these response patterns, or whether they were merely artefacts of the orders of presentation – perhaps being linked to the need for refractory periods following the experience of emotional highs, remains to be explored.

A final consideration concerns the precise nature of the emotional events experienced by the participants, which resulted in the button being pressed. The instructions were that this should only be done when the experience was in keeping with the descriptions of "peaks" by Maslow and others, and not just because of an enjoyable musical affect (participants were familiar with the definition from an earlier phase of data collection). Should the phenomenon be best described in terms of "chills", "thrills" or "tingles", as used by writers such as Goldstein (1980), Sloboda (1991), and Panksepp (1995), rather than true "peaks"? Perhaps even more fundamental is the possibility that the responses were due to the cognitive processes of perception and recognition, rather than the felt emotion of personal involvement (Gabrielsson, 1993) or, as Alvin (1975) stated, association with past memories. As with all experiments, there is also the possible influence of the demand characteristics of the situation to consider.

We believe that the outcomes of research such as that reported here are potentially useful to those who use music as a healing medium, including music therapists who need to know the effects that particular pieces of music may have on their clients. Such findings might also be of particular interest to composers, conductors, or compilers of programmes for concerts or commercial recordings, to help them predict audience reaction and explain anomalies where the responses of listeners were at variance with what was anticipated.

Acknowledgement

This paper is adapted from an article published in the British Journal of Music Therapy, Volume 16, Number 1, by kind permission of the editor.

*Author to whom correspondence should be addressed

Dr Mike Lewis Psychology Division, University College Northampton, NN2 7AL England

e-mail: mike.lewis@northampton.ac.uk

REFERENCES

Aldridge, D. (1996). *Music therapy research and practice in medicine*. London: Kingsley.

Alvin, J. (1975). *Music therapy*. London: Hutchinson.

Berlyn, D.E. (1969). *Aesthetics and psychobiology*. New York: Appleton-Century-Crofts.

Cooke, D. (1959). *The language of music*. Oxford: University Press.

Csikzentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.

Gabrielsson, A. (1993). Emotion and music. *European Society for Cognitive Science of Music Newsletter*, 4, 4-9.

Gabrielsson, A., & Juslin, P.N. (1996). Emotional expression in music performance: Between the performer's intention and the listener's experience. *Psychology of Music*, 24, 68-91.

Goldstein, A. (1980). Thrills in response to music and other stimuli. *Physiological Psychology*, 8, 126-129.

Greeley, A.M. (1974). *Ecstasy, a way of knowing*. Englewood Cliffs: Prentice-Hall.

Hills, P., & Argyle, M. (1998). Musical and religious experiences and their relationship to happiness. *Personality and Individual Differences*, 25, 91-102.

Huron, D. (1992). The ramp archetype and the maintenance of passive auditory attention. *Music Perception*, 10, 83-92.

Kokoszka, A. (1992). Occurrence of altered states of consciousness: An overview. *Imagination, Cognition and Personality*, 12, 89-96.

Krumhansl, C.L. (1996). A perceptual analysis of Mozart's piano sonata K.282: Segmentation, tension, and musical ideas. *Music Perception*, 13, 401-432.

Liester, M.B. (1996). Inner voices: Distinguishing transcendent and pathological characteristics. *The Journal of Transpersonal Psychology*, 28, 1-30.

Lowis, M.J. (1998). Music and peak experiences: An empirical study. *The Mankind Quarterly*, 35, 203-224.

Maslow, A.H. (1962). Lessons from peak experiences. *Journal of Humanistic Psychology*, 2, 9-18.

Maslow, A.H. (1964). *Religions, values, and peak experiences*. Columbus: Ohio State University Press.

Maslow, A.H. (1974). *The farther reaches of human nature*. Harmondsworth: Penguin.

Meyer, L.B. (1956). *Emotion and meaning in music*. Chicago: University Press.

North, A.C., & Hargreaves, D.J. (1996). *Liking for music in everyday life*. Paper presented at the British Association Annual Festival of Science. University of Birmingham, September.

Panksepp, J. (1995). The emotional sources of "chills" induced by music. *Music Perception*, 13, 171-207.

Saperston, B. (1995). The effects of consistent tempi and physiologically interactive tempi on heart rate and EMG responses. In: T. Wigram, B. Saperston & R. West (Eds.), *The Art and Science of Music Therapy: A Handbook*. Switzerland: Harwood.

Shuter-Dyson, R., & Gabriel, C. (1981). *The psychology of musical ability* (2nd ed.). London: Methuen.

Sloboda, J.A. (1991). Musical structure and emotional responses: Some empirical findings. *Psychology of Music*, 19, 110-120.

Sloboda, J.A. (1998a). Music and worship: A psychologist's perspective. In: J. Astley, T. Hone & M. Savage (Eds.), *Music, Theology, and Christian Learning*. Leominster: Gracewing Fowler Wright.

Sloboda, J.A. (1998b). *Emotional peaks in music: How composers and performers produce them, and how listeners are affected by them*. Paper given at Geneva Emotion Week, May.

Storr, A. (1993). *Music and the mind*. London: HarperCollins.

Trehub, S.E., & Schellenberg, E.G. (1995). Music: Its relevance to infants. *Annals of Child Development*, 11, 1-24.

Waterman, M. (1996). Emotional response to music: Implicit effects in listeners and performers. *Psychology of Music*, 24, 53-67.

Winner, E. (1982). Invented worlds: *The psychology of the arts*. Cambridge, Mass.: Harvard University Press.

KAHN & AVERILL (Publishers)

9 HARRINGTON ROAD, LONDON SW7 3ES

Unlocking Your Voice: Freedom to Sing by Esther Salaman	£9.95
Bach: Chorale Harmonization/Instrumental Counterpoint by Malcolm Boyd	£9.50
The Interpretation of French Song by Pierre Bernac	£14.95
Francis Poulenc: The Man and his Songs by Pierre Bernac	£13.95
The Art of Piano Playing by Heinrich Neuhaus	£13.95
Mozart and the Pianist by Michael Davidson	£15.95
French Pianism – 2nd edition – by Charles Timbrell	£19.50
Trumpet (Yehudi Menuhin Music Guides) by Crispian Steele-Perkins	£10.95
Alkan: The Man/The Music by Ronald Smith	£16.50
Tensions in the Performance of Music-ed. Carola Grindea	£9.95
The Pianist's Talent by Harold Taylor	£8.95
Famous Pianists and their Technique by Reginald Gerig	£21.95
New Direction in Cello Playing by Victor Sazer	£16.95
Chopin (Complete survey of Chopin's piano music) by Eleanor Bailie	£25.00

Book Reviews

FUNCTIONAL DISORDERS IN MUSICIANS

By Raoul Tubiana

Elsevier, Paris.

This book may reasonably be regarded as a follow-up to "Medical Problems of the Instrumental Musician", edited by Raoul Tubiana and Peter Amadio; this appeared in 2000, and was a landmark in the still-evolving field of Performing Arts Medicine.

Whereas that text was massive in size, scope, and authority - this is smaller and more compact while losing none of that scope and authority. Whereas the previous text was aimed more at the specialist rather than the patient, this is more accessible to the patient - i.e. the musician affected by these pernicious and stubborn problems. Anatomical and clinical detail is present in plenty for those with experience and interest, but it is linked with explanation in a prose style making understanding easier for the lay person.

The aphorism "A Musician is a goal-orientated individual who feels that his art takes precedence over his physical condition" was, so to speak, the ground bass of the earlier text, as - indeed - it is here, and it is underpinned by another which is almost frightening in its absolute truth; "The majority of musicians start playing well before musculoskeletal maturity is reached." This is the window of opportunity, when bad habits should be identified and eradicated, and also when the choice of instrument can be questioned.

In his preface to the book, the pianist Michel Beroff describes his 6-year struggle with Functional Dystonia and - more tellingly - describes his then teacher's observation, at the age of ten, of a weakness in the articulation of his right thumb "which might turn out to be a handicap in later life." Neither diagnosis nor treatment were sought, perhaps understandably in the light of the knowledge at that time - but, in the light of present knowledge, it would be criminal for such an observation to go unchallenged. Here, one must pay tribute to those great pianists - Graffman, Fleisher, Beroff - who have gone public about their disabilities so as to bring these problems out, thereby facilitating progress in investigation, treatment, and research.

The book stresses the essential unity of the skeleton, with the importance of correct spinal posture enhancing correct peripheral function, and the multifactorial nature of a musician's problem is emphasised as is the importance of a holistic approach to each case. Early diagnosis (now the rule rather than the exception) with early treatment will prevent the development of chronic pain syndromes with the allied miseries of tension and anxiety - and these last two are discussed further as psychological disorders.

Focal Dystonia is considered in detail, with what is probably its best definition, i.e., "a painless motor control disorder localised to groups of muscles controlling fine

movement". Tubiana makes an important point, that musicians are high achievers who characteristically push themselves to the limit so that such disorders, when admitted, are more deeply entrenched and so more difficult to treat than in other disciplines.

The corollary to this is yet another aphorism; "The Artist is an emotional athlete. Like an athlete, he performs for the public. Like an athlete, he loses his job if he does not perform. But only an athlete works daily with physicians and trainers."

The treatment of choice is a slow and thorough 'neuromuscular re-programming' and 'rehabilitation', with the patient being brought fully into the picture so as to understand not only what is being done but why it is being done, and why the timescale is so long.

This is where the book scores, in its explanation of problems and treatments which can support and amplify the work of a caring and empathetic therapist.

Perhaps, for many, the value of the book lies in its final section, Risks and Prevention, but the book is far more than a "quick fix" from a single brief chapter.. It should be mandatory reading for anyone concerned with the problems of the professional musician, and might well be considered as a work book for the Course in Performing Arts Medicine shortly to be established

Michael Lasserson

MUSIC & DYSLEXIA

OPENING NEW DOORS

edited by T.R. Miles and John Westcombe
Whurr Publishers, ISBN 1-86156-205-5, £16.50

TUNING IN PRACTICAL PSYCHOLOGY FOR MUSICIANS

Lucinda Mackworth-Young
MMM Publications, ISBN 0-9539485-0-1, £12.99

As openness about previously unrecognised or unexplored issues increases, we become ever more aware of the complex interplay of the psychological and the physical. If an instrumentalist has a playing related stress injury it is often necessary to question their mental as well as their physical approach to the instrument and performance. As discussion increases, so more holistic approaches become adopted. All three of these books are part of this ongoing process.

Vocal students at one of the London music colleges are now benefiting from exercises designed to coordinate left and right brain activities; understanding what each hemisphere does and how they relate is now recognised as a vital tool in learning and teaching.*

Dyslexics usually have a dominant right hemisphere, the area that deals with intuition, emotions and spatial concepts. Information is often coded in terms of images rather than words and neuroscientists believe that basic musical responses and skills are also centred on this side. Music & Dyslexia approaches the subject from every possible angle. Essays from musicians who have dyslexia, for many of whom the diagnosis was not made until they were in their thirties, create a strong impression of how the syndrome affects learning and life. For many of us who learn to read music easily, the notation becomes a key to creating the sounds; for those with dyslexia, these 'dots and squiggles' can be a barrier between them and the music. Even when that barrier has been breached, things most of us take for granted, like switching the gaze between the conductor and the music, or translating a vertical fingering chart onto a horizontal flute, can be prohibitively difficult.

The subtitle, Opening New Doors, stresses the book's general aim to promote understanding of dyslexia and to provoke more creative thinking about the strategies and attitudes we, as teachers, should adopt. Chapters written by professionals, teachers, counsellors and doctors, explain the basic medical symptoms of dyslexia and advocate a sympathetic and multi-sensory approach to learning, using, for instance the Colour-Staff. Above all the positive effects of a strong right-dominant brain are emphasised: the ability to grasp structure; to think in three dimensions; to focus on the music beyond the notes. In an age where many left-brain tasks can be done by computers, developing these skills can be a distinct advantage.

The editors, Miles and Westcombe, have put together a book that is informative and optimistic. It would have been useful to have a fuller discussion of the various methods being used to help those with

dyslexia, such as Anna Gillingham's techniques (advocated but not described by one contributor) and the Brain Gym® exercises mentioned above. But those with dyslexia have suffered far more from the ignorance of those teaching or employing them than from the syndrome itself. This book both calls for and is part of a change in attitude. Many of the learning and teaching strategies described, mostly by dyslexics themselves, have implications beyond this one category of students.

Lucinda Mackworth-Young's name has long been synonymous with encouraging a psychological understanding of the processes underlying learning and the relationship between student and teacher. She has finally enshrined her approach in print. *Tuning In* takes an experiential approach, leaving space at the beginning and end of each section for readers to write down their own thoughts about various issues, persuading us to find time to examine and reflect on our own learning and teaching experiences. The book is aimed at all musicians, whether teachers, learners or performers, although I suspect that it will be primarily of interest to teachers in these various roles.

The book opens with a quotation from *The Spiral Dance* by Miriam Symos, which again highlights the need to combine the 'holistic, intuitive mode of the right hemisphere and the unconscious' with the 'linear, analytic, conscious mode of the left'. This continual emphasis on what exists beneath, behind and below mere words is not only at the heart of music but is also indicative of the powerful role music, and by implication, music teachers, can play in the personal and emotional growth of individuals. Reading through this book one is made disturbingly aware of how much more is at stake here than learning an instrument. Mackworth-Young describes the inner voice: it has the potential to be an Inner Critic or an Inner Carer, having a profound affect on our lives, not just as students and performers, but as human beings. These characteristics are set up early in life, according to how the child's earliest needs are met, and the child will then transfer onto the teacher the role of parent, subconsciously equating the need to achieve, to please, with the earlier and more urgent needs for food with all that entails in terms of 'failure'. The teacher has the challenge and responsibility of encouraging the voice of the Inner Carer to predominate.

It is the way in which Mackworth-Young brings the world of counselling and psychology to the subject that makes many of the ideas in this book sound fresh. Pupils come to lessons to learn, not for us to teach; pupils practise when they can play a piece so it is important for them to internalise effective learning strategies; as teachers we need to be aware both of our own fears and pressures and also of the limits of our role. Many of the teaching concepts are already known, but are given a different perspective and presentation. As well as encouraging us to analyse and deepen awareness of our own processes, she gives practical suggestions for approaching each subject. The book includes chapters on the pupil/teacher relationship, motivation, dealing with energy levels, performance, group teaching, parents, research on our own teaching and an age-related learning guide.

This is indeed a very valuable book. But, more importantly, this approach to the subject should be a mandatory part of our training as teachers. As we all know, the considerable influence we can have on the lives of children who pass through our hands deserves wider recognition.

Pamela Lydiard
Deputy Head Piano Department GSMD

Acknowledgement: This article has appeared in MUSIC TEACHER and is published by kind permission of the Editor.

*(To order *Tuning In*: Tel 020 6352 1666, or email: <musicmindmovement@btinternet.com>*

**Further information on Brain Gym® exercises can be obtained from Body Balance Books, tel 020 8202 9747, ekukf@mccarrol.dircon.co.uk*

KEEPING YOUR NERVE !

By Kate Jones
Faber Music

This pocket-size book offers very sensible advice concerning 'Confidence - Boosting Strategies for Musicians and Performers', as it is announced on its cover.

Kate Jones, the author, is a Counsellor for musicians, having studied Music at Goldsmith College and having gained an MA in African Music, Art and Religious Studies at the School of Oriental and African Studies (University of London), thus she is well qualified and the right person to give such advice.

She knows and understands the fears and the problems confronting a performing musicians at all levels and she brings to this very useful manual her many years of experience having appeared in public from the age of fourteen.

Moreover, she had interviewed several outstanding performers of our time, among them Steven Isserlis, Stephen Kovacevich, Joanna MacGregor, Gillian Weir and had discussions with musicians involved in music education, such as Richard Crozier, Christine Brown, Suzannah Power, Christian Lindberg and others who gave their own insight into the way they prepare themselves and their students to cope with 'performance nerves' or other situations.

Kate Jones explains what causes the stress and the anxiety in performance and gives some ideas on how to harness this into a positive force (Chapter 2), followed by practical advice on how to 'build-up' to the day to perform at one's best. The aim is to reduce the pressure whether from parents, the teacher or actually from the player himself, by adopting a positive attitude. There should be no question of succeeding in an audition, 'passing', 'getting high marks' or 'failing', but simply to play as well as one can, and, ultimately, to enjoy being involved in music making. After all, playing an instrument or singing should be a joyful experience.

This useful booklet gives plenty of well presented ideas, with charming illustrations and it is highly recommended. It is a MUST for performers, teachers, students and parents of young pupils.

Carola Grindea

Musicians' Injuries

*a Guide to their
Understanding and Prevention*

by Nicola Culf MMus, Dip(RCM), ARCM

*Vital reading for today's music students, teachers, and
all those involved in the music profession*

Illus. P/b 108pp £8.50 ISBN 1-898594-62-7

'The Best small reference book in the field of musician injuries in the entire world' - Jacques Voois DMA,
Westchester University, USA

'I would happily recommend it to students and teachers as well as to music libraries' -
In Touch, Royal Opera House



PARAPRESS Ltd.

5 Bentham Hill House, Stockland Green Road, Tunbridge Wells, Kent TN3 0TJ, UK Tel/fax: (01892) 512118
e-mail: e.imlay.parapress@virgin.net

Mind and Muscle : an owner's handbook

In a school where the author used to teach, a pupil once remarked: "Oh, I see, God did a good job of making us, but forgot to put in the handbook." Here, at last, is the missing guide. Written in everyday language, it gives us the facts about the intimate links between thoughts, emotions and muscle behaviour, and shows us, in detail, just what principles really underpin good functioning.

All these facts, which Elizabeth Langford explains with such simplicity and clarity, have been known for many years, and are taken for granted by the true experts in this field. However, expressed in the technical language of specialist journals and scattered throughout volumes of reference, they have not been available to the public at large. Mind and Muscle performs the vital service of making this material accessible.

Progressively, the reader is invited to enter into the practical reality of this information, and to experience its benefits. This is a book that will be invaluable for anyone whose working tool is their body - whether athlete, musician, dancer, dentist or carpenter - and who is looking for improved performance or simply for less strain; for those who are convalescent or battling with a handicap; for the many people suffering from that ever-increasing problem: back pain; indeed for anybody keen to rediscover a sense of well-being.

Elizabeth Langford, a professional violinist, and a pioneer of the use of the Alexander Technique in music education, was the first of her generation to be authorized to train Alexander teachers. She is a former chairman of the Society of Teachers of the Alexander Technique, and currently president of Centre Alexander (www.alexandertechniquecentre.be). She can also be contacted on ++32.2633.3059.

"...tour de force...the distillation of a lifetime's experience...management of oneself to achieve optimum performance..."
(Piano Journal)

"... delighted that the research and all the hard work has come to such a magnificent and useful conclusion. The book will be of enormous use to us here at the British Performing Arts Medecine Trust"

Mind and Muscle: an owner's handbook

by Elizabeth Langford (pub. Louvain: Garant, 1999) – 253 pages, 75 illustrations (line drawings, anatomical drawings, photographs) – ISBN 90-5350-883-X £17.95 (Dutch and French translations are also now available.)

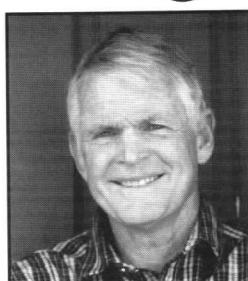
Distribution: Central Books (UK); Mornum Time Press (USA); MAKLU, Antwerp (rest of the world)

No nonsense device gives pain a lesson

A small hand held device, is being heralded as a breakthrough in TENS therapy and has just been launched in Britain. The device has already provided relief to thousands of sufferers in other European countries. Tower Health's director, Jason Timms, said "Since the launch of the device we have all been astounded by the results. It is now our most successful pain relief treatment and we are really proud to be associated with it". Mr David Reif from Wiltshire has made remarkable relief after suffering arthritic pain in his hands for the last 10 years. After one treatment he was so overwhelmed by the sudden ease of pain that he put pen to paper and wrote to Tower Health. "I was frankly sceptical when I was given the device. I did not believe it would

work for me, but my friend pointed out the money back guarantee so I had nothing to lose. I still did not believe it would work for me, but my friend sent for it. After 10 years of constant suffering my pain was relieved".

The relatively small device about 10 inches long fits snugly into the hand. It is held with the point placed on the affected area and at the press of a button it delivers a specific frequency direct to the point of pain, providing relief straightaway. The device is a 25 year advancement of the standard TENS system, but far more direct and easy to use. There are no leads or pads to worry about, just one simple treatment wherever you are whenever you need it. Doctor Simon Dunstan, who has been evaluating



"I couldn't believe it, relief after all these years"

the device and hoping to set up further clinical trials here in the UK says that this could be a real alternative for a lot of pain sufferers, "People who have tried this device, have found it beneficial. It can often bring relief within minutes". So far the device has helped thousands of people with different kinds of pain such as Rheumatic

"people with back pain, rheumatic joint pain, arthritic pain and even migraine will benefit...in fact, whatever your condition it is worth trying."

pain, Joint pain, Back pain and even Migraine headache. Tony Buckley has been using the device for arthritic pain in his knees - and found it to be very effective. "I would wake in the mornings with bad knee pain. I took painkillers and used a TENS but neither relieved the pain". Now thanks to Tower Health's new device, he is able to beat the pain. "I use it on each knee for a few minutes, sometimes it almost leaves me completely pain-free".

TOWER HEALTH offers a money back guarantee on their range of pain relief products, so if you do suffer with pain there is an opportunity to try the products without risk. The devices are available from as little as £59.95 plus £2.50 postage and packing.

Call TOWER HEALTH on

0115 9826 306

Or write to Tower Health Dept PGNG5,
Tower House, 32 Musters Road,
West Bridgford, Nottingham, NG2 7PL



The role of the thumb in pianists suffering from Focal Dystonia

Carola Grindea

In my article on 'Focal Dystonia in Pianists and Guitarists' (ISSTIP JOURNAL No 8) and in 'Fleisher Syndrome' (ISSTIP JOURNAL No 9; 'PIANO' Aug /Sept 2001) I tried to explain my approach of re-education of the motor-sensory system in the treatment of this mysterious and complex condition. I have worked with more than 30 pianists, 2 acordeonists, 13 guitarists, 3 violinists afflicted by this in-coordination (also known as 'the CRAMP') when one or two fingers curl under the palm and the player is unable to bring them in their usual position. The flexor muscles are over-active while the extensors do not respond to the brain messages. The more he tries to correct this the worse it gets, the pianist or guitarist having to interrupt his career or his studies. The psychological trauma aggravates this devastating state and there is no wonder that a period of deep depression follows.

Focal Dystonia has been and still is the subject of many studies, dissertations, seminars and international conferences where medical consultants, musicians and therapists specialising in this field, present their findings.

The consensus is a 'Retraining of the motor/sensory system' as the only approach which has given some good results so far.'

...Correcting poor posture and musculature imbalance through a programme of re-education of the whole upper limb, shoulder girdle and the spine" had remarkable results (Prof Raoul Tubiana/ Philippe Chamagne BAPAM Newsletter, Autumn 1995 pp 23-32; Raoul Tubiana ISSTIP Journal No 9 October 1998). "Relaxation techniques and laborious retraining ...by some teachers... have been of some benefit" (Scott E. Brown Musicians Western Journal of Medicine 6. Dec 1992) Most specialists maintain that no single approach can claim 100% success, but statistics show remarkable results in many and sometimes stubborn cases.

I had the privilege to work with Dr Bagwam Shahani, the neuro-physiologist of the famous team of doctors who first operated on Leon Fleisher's hand at the General Massachusetts Hospital in Boston (1982). I visited the hospital in 1983 when Gary Grafman, another celebrated pianist suffering from Focal Dystonia, was undergoing Biofeed - Back therapy under Dr Shahani's supervision. He had already presented communications on his findings that the only therapy was a complete 'retraining of the whole motor/sensory programme'.

That meeting was crucial for my own development and I have tried to emulate Dr Shahani in my own approach to treating dystonia in instrumentalists .

Therefore I based my approach on a programme of 're-education', of re-assessing the physiological factors of the instrumental technique.

The process of re-education entails a well structured study:

1. Liberate the body and mind of any tension through Grindea Technique. This corrects any imbalance in posture, bringing a perfect alignment of head, neck, back, correct shoulder girdle and shoulders position as well as a perfect state of balance of the body, as if weightless.

2. Study the Freedom of Breathing through long, slow exhalations which relax the shoulders and the diaphragm area (solar plexus). Long, slow exhalations are the greatest ally of any performer: they calm the physiological response to any anxiety. When 'exhaling', with hands and fingers resting on the keys, the pianist should become aware of a great quantity of arm-weight flowing through the relaxed arms into the hands, fingers and the keys.

Many pianists, guitarists, string players create a lot of tension around the mouth and jaws. They also take a sudden in-breath at the slightest anxiety in the mind, the body becomes rigid and they stop breathing until 'after' the difficult moment.

I recommend to play with lips slightly parted, thus they 'have to breathe' with the music.

3. Learn to maintain the state of balance when practising and performing. (Over-relaxation is to be avoided in piano playing as this brings wrong alignment of forearm and thumb).

4. Study Ergonomics - correct interaction between the player and the instrument - through a technique based on physiologically correct 'natural movements', which allow muscular co-ordination to function freely.

Correct ergonomics demand correct position of joints of the playing apparatus : wrists, elbows, shoulders- as well as their balanced state.

5. Study the physiological factors in piano technique: kinaesthesia, role of arm-weight and muscular energy, tension/relaxation, state of balance of body and arms, freedom of breathing.

6. Acquire a piano technique using natural movements.

These are the 'downward' and 'upward' motions of the wrists, using arm-weight in conjunction with muscular energy (in response to the music), the only movements which release the tension in the wrists and arms.

This is the approach I use with all the pianists whether they are students, teachers, performers, and all dystonia cases have to follow first this regimen.

In minor cases such as tendinitis, ganglions, pains caused by some imbalance such as incorrect posture or incorrect alignment, these can be solved in one or two sessions.

In Focal Dystonia the process of rehabilitation takes longer. The pianist has to work first on the 'de-programming' of the old patterns and then on the 're-programming' of new ones. In most cases they get through the 'new' technique in the first 2 or 3 sessions and start working at specially selected pieces immediately, learning to apply their newly acquired approach.

Most researchers have found that one of the main causes of the condition was playing with high finger articulation, bent fingers and very often with stiff wrists and arms. In some cases, but only rarely, over-relaxation was the source. This creates an imbalance in the alignment of the hand, forearm, elbow. The elbows are too near the body and this does not allow free movement along the keyboard. ('Fleisher Syndrome')

There are two distinct piano schools with regard to 'finger technique'. One school emulates 'finger articulation' (raising the finger before pressing the key), the other recommends 'playing from the key surface'.

I recommend 'playing from the key surface', with elongated fingers, almost flat, using the pad of the finger. The finger is placed on the key and when the WRIST is either dropped or raised, the finger catches the key in its motion.

The WRIST is the pianist's NEW TOOL. Thus, the pianist uses a new set of muscles to produce the tone or tones. He ceases to 'think' FINGERS when playing the piano and 'thinks' WRISTS instead. His only concern from now on is to give mental directives to the wrists. He is surprised to see that the orders from the brain are now obeyed and he is able to play.

In his teaching, Liszt states that 'one must play fully from the wrist...' 'the hand falls from the wrist on each note.'

(Auguste Boissier in 'Liszt Pedagogue' Ed Honore Champion 1976).

The pianists suffering from Focal Dystonia responded well to this 'new approach' and in a relatively short time. They greatly enjoyed playing pieces with chords, octaves, passages in double thirds and other aspects of piano technique. Some were completely cured and returned to their profession, performing or teaching, others were contented to play certain pieces with more ease and just enjoy the feel of a more relaxed body.

Recently I have worked with three pianists, each one presenting a different problem:

- a) the 3rd and 4th fingers in the right hand curling under the palm
- b) 2nd and 3rd fingers in the left hand sticking out very rigidly.
- c) the right hand seized in a cramp, with the thumb sticking up, raised.

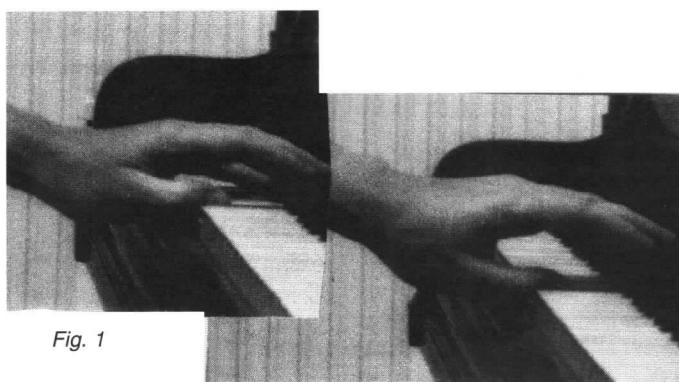


Fig. 1

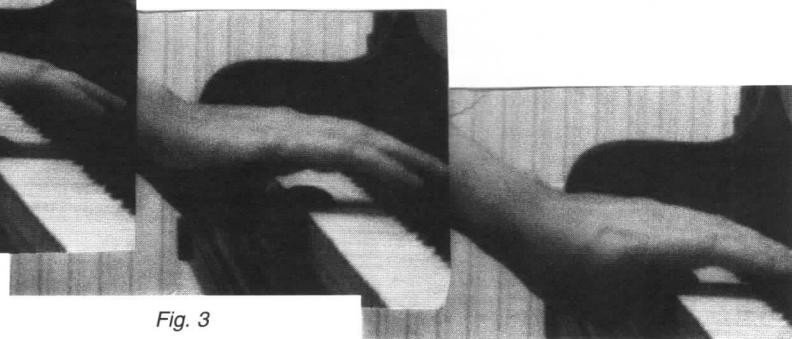


Fig. 2

The Method

They all had bad posture and were unable to relax their body and muscles, no matter what activity they were involved in, let alone playing the piano.

They learnt first to 'liberate the body' and become aware of a state of extraordinary well-being through the 'Grindea Technique', which brought stillness in the body and in the mind.

When starting work at the instrument, they placed the relaxed hand on the keys, with elongated fingers, almost flat, NOT BENT, their arms free of any stiffness in the muscles, particularly in the JOINTS: wrists, elbows, shoulders.

At first they learnt to play very gently, with fingers in this new position, touching the keys on the pads, 'drawing' the finger (only the 'nail-joint') towards the palm, with no energy, using just enough pressure to produce a *pp* sound. The hand, wrist and the rest of the arm are in a relaxed state. (This is the touch taught by Chopin's pupils for 'cantabile' tone). To play at least 10-15 times with each finger, then once only with each finger, slowly, gradually reaching a moderato speed, not fast.

Next step was to learn how and when to use the arm-weight in conjunction with muscular energy to produce great volume of sound. The use of the whole arm is important, with the 'big muscles' of the upper arms and the upper dorsal muscles being involved. Most important of all, they studied the processes of 'tension/relaxation' in piano technique, when is tension created and when is it released. Throughout all exercises, the WRISTS must remain flexible. NEVER LOCK THE WRISTS.

Pianists affected by dystonia develop weakness in the fingers and hand muscles – and these have to be strengthened. Fingers and hands muscles have to be strengthened (Dinu Lipatti always told his students: 'Steel fingers in velvet gloves') to 'receive and support the great quantity of arm-weight and energy which is then transmitted to the keys. The 'bridge' created by the finger-knuckles is the 'point of resistance', from where the arm-weight and energy meet the fingers supporting them. Most pianists suffering physical problems or injuries RELAX their hands and fingers, thus their muscles are underdeveloped.

I recommend exercises in double-thirds (practised with correct wrist movements: 'up-down-relax') This helps, particularly in the study of 'brilliant' touch, when scales and arpeggios passages are practised. Increasing the speed

Fig. 4

gradually, the movements became smaller and smaller, the wrists 'vibrating' and the pianist being constantly aware of a 'free wrist'.

The process of re-education seemed effective in the early stages of their studies.

They felt greatly encouraged by their newly acquired ability and practised the technical formulae and exercises, using the fundamental MOVEMENTS of the wrists in piano playing, together with the whole arm: 'downward' and 'upward', the only movements which release the tension.

Thumb Movements in Scale Passages

It was interesting to note that while they could play short passages of agility, there was a slight stumble when 'passing the thumb' under the hand in ascending scale or arpeggio passages or when 'turning the hand over the thumb' in descending scales or arpeggios .

(Leon Fleisher admitted that he could play with both hands Beethoven Emperor Concerto or Brahms No 1, but right hand scale passages in Mozart or Haydn were still causing him some difficulties.)

Smooth, rapid shifts of the hand require the understanding that Piano Playing entails two contrasting actions : the keys are pressed VERTICALLY to produce the tone while the hands and arms move HORIZONTALLY in the direction of the musical phrase . These two different actions must be executed simultaneously and can be solved as follows:

When one finger presses the key, the next one is simultaneously prepared on to the next key, thus the hand is 'sent' along the keyboard in the direction of the musical phrase.

Right Hand exercises:

a) In ascending passages : 1st finger plays while 2nd is prepared on the next key, ready to play, and so on; to turn the thumb under the hand the 3rd (or 4th) finger 'presses' the key while the thumb is simultaneously 'prepared' on to the next key; when the thumb has played, the 2nd finger is already on the next key, and so on.

b) In descending passages, when the thumb 'presses' the key, the 3rd or 4th finger is 'prepared' on the next key, thus the shifting is done 'simultaneously'

For left hand, reverse the process.

(Ann Liva, the American pianist and pedagogue who studied with Joseph and Rosina Lhevinne, at Juilliard School, introduced at an EPTA CONFERENCE her famous exercises, with 3 actions executed simultaneously i.e. 2nd Finger presses the key, the 1st releases the previous key while the 3rd is prepared onto the next key. Students practise many different patterns of such exercises. These demand great concentration and precision to synchronise them.)

I was very anxious to find out the reason for these stumbles which hindered the technical ease in fastscale or arpeggio passages although several dystonia pianists had been cured in the past through this technical approach.

I observed the three pianists playing in slow motion and in different speeds . We experimented with the special exercises using the thumb as a 'pivot' for rapid shifting of the hands and recorded on video . We studied the VIDEO, the position of the thumb and its movement when turning the hand over it and the 3rd (or 4th) finger touches the next key, simultaneously.

At this point I NOTICED that the thumb does a rotational motion when the hand is shifted.

At first, I was surprised as this particular aspect has not been mentioned in any treatise on Piano Technique. I then remembered having met the great pianist, Solomon, who agreed to hear me play (at Myra Hess's recommendation). He gave me just one lesson on 'his' finger exercises which every new student had to learn before going further . He showed me special thumb exercises to gain flexibility: vertical – raising and dropping it- and lateral - to the right and to the left. These I had been studying previously. He also recommended 'rolling' it, rotating it to the right and to the left.

I am afraid, in my ignorance, I did not think much of these 'strange' rotating exercises and could not see their purpose. It is true that Tobias Matthay 'uses rotation' but in a quite different context.

Watching the video was a real eye-opener . I realised that, in fact, this is what the thumb does when 'it' is allowed to play 'correctly' when the hand is shifted over the thumb.

We have been working on scales, arpeggios and other passages, practising these 'new' thumb movements

R.Hand: The thumb rotates to the left in descending passages and to the right in the ascending passages.

L.Hand : The thumb rotates to the right in ascending scales and to the left when descending.

Figs 1, 2 ,3, 4 *Left Hand*: left thumb rotates from left to right, the hand turning over the thumb.

The results have been very satisfactory.

Pianists a) and b) can play scales and arpeggios and are ready for their examinations and recitals.

Pianist c) is still encountering some impediments. His r. thumb is raised in fast descending scales.

Considering that he had been incapacitated for nearly 15 years (he could not finish his Degree at Birmingham Conservatoire) he is happy to be able to play several works (Beethoven Sonata op 31 No 2, 3 Chopin Etudes and smaller pieces, Messiaen Preludes, Chopin Preludes, etc.) and he works assiduously at his technique.

He is determined to conquer the condition.

Conclusion

The three musicians are aware that they have to continue working slowly, constantly observing their practising.

This slow 'programming' which introduces many subtle changes in the process of re-training the motor /sensory system, has to be allowed to become part and parcel of the pianist's behaviour at the instrument and ultimately to become 'conditioned reflexes' or what is known as 'automatic pilot'.

The main goal is to regain the confidence that the newly acquired knowledge and ability to play will serve them not only when practising in their studio but also when appearing once again in public.

Performance nerves and tension

Guitarists problems

John W. Duarte

Most performers experience nervousness before the event – often described as “butterflies in the stomach”. In this respect a ‘performer’ may be defined as anyone who exposes themselves to a listening and/or watching audience – a musician, actor, after-dinner speaker or circus artiste, for instance. It may be mild or extreme and it can persist throughout the performer’s whole career. However, to regard this as one single, simple phenomenon, or as a bad thing would be naïve and unhelpful. In fact there are two distinct types of performance nerves: One is both bad and avoidable, the other is good and to be welcomed.

The bad and avoidable

Unproductive physical tension arising from faulty technique: It is impossible to play an instrument or, indeed, perform any physical action without tension. The simple act of sitting or standing requires tension, without which one would collapse in an inert heap! This represents ‘productive’ tension and is something we learn to live with. Good technique as that by which the desired results may be obtained with the minimum of effort, eliminating or at least minimising unproductive tension.

In the case of guitarists the commonest sources of unproductive tension are:

Sitting position:

Unproductive tension resulting from a poor posture as the most damaging, since it is present throughout the performance and thus has ample time to spread to all parts of the body. Tension is like cancer – it spreads from its source to other parts of the body; a clenched left fist will in time lead to tension in the right leg! Tensions necessitated by the act of playing are transient - apply and release, and do not have time to spread. The guitar is held in the most inflexible position of any instrument – only the cello is comparable, held between the legs, but the player does not have to twist the torso and may look directly forward in a normal, relaxed way.

In the ‘traditional’ sitting position the left leg is raised on a footstool and the torso is twisted to the left so that the player is looking in the same direction as the instrument. Both these acts unavoidably create tension and it is exacerbated when the right leg is planted upright, normal to the floor, turning the lower body into a rigid tripod. This may be minimised by drawing back the right leg and allowing it to rest passively, with the heel of the right foot off the floor. This considerably reduces the tension in the back. Alternatively the use of a cushion or some form of apoyo to support the guitar on the left leg raises the instrument to the desired height without need to twist the torso. Those ‘traditionalists’ who refuse either of these options should remember that many of those whose business it is to treat ills of the human frame (osteopaths and physiotherapists) find that, among their musical patients, guitarists are the most numerous! The young, whose bodies are flexible, may not be conscious of these tensions, but they are liable to become so as they get older and less supple.

Unnecessary movement of the left arm:

Any weight is at its ‘heaviest’ when raised to shoulder level – ask any weight-lifter! Nothing is closer to the shoulder than is the arm. If the arm is allowed to hang passively by the side it can continue to do so indefinitely without discomfort. Try holding it at any distance from the side! Thus a good principle is to minimise the upward movement of the left arm, avoiding what is commonly known as ‘bagpiping’. Some lifting of the left elbow (and therefore the arm) is necessary to accommodate certain attitudes of the fingers, but it is far less than is widely realised. If the flexibility and independence of the left-hand fingers are developed, most dispositions of the fingers may be achieved without carrying the elbow far from the body.

With all but the smallest of hands it is possible to play full barrés without extreme arching of the left wrist, throwing the index finger into a straight-line – in which excessive pressure becomes necessary, and, as barrés are often maintained for a significant period of time, this can instil tension. Many players exert greater pressure on a barré than is necessary to maintain a clean sound; this is true also of any disposition of the left hand. Exercises designed to train the hand to apply no more pressure than is needed in any situation are as invaluable as they are rarely undertaken.

The beneficial, not to be avoided:

The “butterflies” experienced by performers before an event are most often a form of excitement, akin to that felt by a child looking forward to a treat – anticipation of enjoyment. This form of ‘nerves’ is beneficial and is usually converted into creative energy when the performance starts. It has been said, that if one does not undergo this sensation one is probably not a true artist! This may be an extreme view but it contains a large element of truth. The majority of experienced performers understand this and are not unduly disturbed by it, but some may find it a recurrent nightmare. One very experienced player once said: “Every time I go on stage, I die!”, but this was never reflected in his performances. Another, a student of mine, was reduced to a shaking jelly before playing, her hands shaking with a ready-made vibrato, but the moment they touched the guitar they became calm.

Tension of primarily mental origin:

This is a form of anxiety that is avoidable, and arises from a single factor that may be summarised in the advice “Never play anything in public of which you have any doubt”. No piece is easier than its most difficult passage - even one bar! If it goes wrong too often in practice, don’t risk it – it’s not going to get any better in a performance, probably worse! Of course even the greatest of players makes mistakes, but they are the result of a momentary loss of concentration. The player knows well, that he/she has played it countless times without a mistake – it isn’t because they can’t play it reliably, and no lurking fear was in his/her mind. If you trip over the kerb when mounting a pavement it doesn’t mean that you are less good at doing it than you should be; you’ve done it so many times before and this time you just failed to concentrate!

If you are playing a piece in which there is a hazardous passage or moment, as it approaches you become acutely aware of the risk of failure; the chances are heavily in favour of it. Should disaster strike, it may disturb you so much that easier passages suddenly appear difficult, your mind being focused rather on the looming problem, and mistakes may multiply. The fear is present before the passage in question, it strikes when it appears and causes 'after-shocks' thereafter.

The fear is primarily in the mind, so how does it become a physical problem? Because the mental and the physical often cannot be separated – they become interconnected. We are "paralysed by fear, rooted to the spot". Fear paralyses the physical responses that might help us to escape from the threat. Imagine two parallel lines drawn on the floor of a room, maybe two feet apart. We should have no difficulty in walking between them without stepping outside their limits. Now transpose these lines to an exposed place at the top of a high building and imagine walking within their path. Most of us would either fall off to our death, or crouch in terror, waiting to be rescued! The path is the same, so why the difference? It is the magnitude of the penalty to be paid if we fail – mere irritation in the first case, certain death in the second. In performance the second is not fatal, but we suffer the humiliation of failure in public.

How can it be avoided? By refraining from playing anything that is under-rehearsed and not firmly in the memory and fingers, or anything containing a risky passage. It is not unknown for an experienced performer to circumvent a

potential problem by turning it into a feature of 'interpretation' by applying a brief rallentando or a tactical rubato, but this presents another kind of hazard and is best left to those who know how to carry it off convincingly! The temptation to make a strong impact is strong, but it may carry a high price tag and remember, for most players, they are only as good as their last performance! There are no prizes for courageous failures, If someone tries to jump from one to the other of tops of the twin towers of the International Trade Centre in New York there are only two possible outcomes: Either they succeed and become very famous, or they're dead, and famous only for their stupidity! The best performance is a musical one, irrespective of any display of virtuosity, and it is the one that generates least unproductive tension and maximum peace of mind.

I have tried to cover this ground in simple language, without resort to detailed anatomical terms, jargon, or psycho-babble. This approach has proved effective in live teaching; I hope it is equally helpful on paper.

John W. Duarte

Trained as Scientist and studied the Guitar afterwards.
He lectures world-wide giving workshops with guitarists.

London College of Music & Media
A Faculty of Thames Valley University

Music courses for 2002

The London College of Music & Media at Thames Valley University offers traditional musical training in a contemporary context. An exceptional team of eminent concert artists delivers a first class training in instrumental and vocal disciplines. Our teaching portfolio extends to encompass music, media and creative technologies. This unique mixture provides the opportunity to excel in your field of interest.

We offer a variety of interesting and stimulating music courses at all levels:

Undergraduate

- The Newly revised BMus (Hons) Performance/Composition course has a wide range of options in years 2 and 3

Postgraduate

- Our masters courses include Performance, Composing Concert Music, Composing for Film and Television and Composing for Musical Theatre

Junior College

- Saturday courses for young people include GCSE, A/AS Level Music and Music technology. Specialist courses for 16+ with no tuition fees

Part-Time Studies

- A range of evening and short courses, including Opera Workshops, EPTA Piano Pedagogy Course, Art of Teaching Singing course and Music Medicine Therapy course in association with ISSTIP.

For further information on all of our courses, please contact us.

Thames Valley University supports mass participation in higher education

web: <http://elgar.tvu.ac.uk>

e-mail: enquiries.lcm2@tvu.ac.uk

Telephone: 020 8231 2168

London College of Music & Media
Thames Valley University, St Mary's Road, Ealing, London W5 5RF



Musicians and Anxiety

A music therapy perspective

A musical psychological approach to tension, anxiety and stress

Alessandra Cartocci, Pianist, dip. Mt, Laureat cum laude in Lettere e-mail: music.ale@tin.it

Introduction

During the early years of my career as a pianist I happened to gradually develop a kind of awkwardness. I was basically feeling that what I was doing with practising, rehearsing, performing, travelling and doing the same things all over again, wasn't constructive. Travelling from one place to another, performing, practising, reharsing were all things involved with the music business I was part of. I was proud of the opportunity while many others struggle a long time and don't manage to "get through". . Something was missing in my life. This way of making music was not right for me and I began to feel that it was all quite useless . I was somehow trapped in the circuit of playing music, worrying about perfection, thinking about how it would be judged, worrying about the audience and I was almost on the verge of leaving music and stop playing.

I studied several approaches and found different ways of being involved in the art/ business which became important for me. One of these was Music/Theatre .

It was only when I discovered Music Therapy that I became very excited. The idea of music with a therapeutic value had a great appeal to me and I thought that this particular approach to music would fulfill my need for a goal, for feeling useful in doing music.

I then decided to train as a Music therapist. This added a new dimensions to my whole life. Surprisingly enough , at the end of the training, not only that I received my Diploma in Music Therapy, but I also realised that my piano playing was quite different. It was freer, much more relaxed and I actually enjoyed being back at my instrument.

In fact, I was playing again and I could regard my newly found piano career from a totally different perspective.

Music making had real meaning now that it was a 'giving experience ' , helping others through music and I realized that a new way of intending music was indeed possible.

History and applications of music therapy

Looking for a definition of music therapy, we come across hundreds of different ones. This is because Music Therapy is a relatively new discipline with several different implications. We can say, along with L. Bunt that "in music therapy we are trying to make contact with another human being through music. We can observe how clients use the music and how any problem may get in the way of interactive communication."

[1]

'Music therapy is the use of sounds and music within an evolving relationship between client and therapist to support and encourage physical, mental, social and emotional well-being.'

Music Therapy had, since its origin, two main points of focus: psychiatry and mental or sensory deficit. There are

many different schools of music therapy, e.g. psychoanalytic, behavioural, medical, etc. More specifically, humanistic music therapy is based on the use of accurate listening and improvisation. This is not the kind of improvisation we are familiar with. It is not based on pre-defined structures (such as in jazz) nor is it based on aesthetic elements and rules. It is a kind of improvisation that emerges from people's very hearts. Through improvisation, one is able to express things which are very difficult to say in words or otherwise. This is the reason why Music Therapy has been directed towards people whose mental or physical abilities are under-developed.

It is connected to the non-verbal implications of musical communication. It is the kind of improvisation that every human being is able to do. It is a unique way of self-expression and everyone has the capacity to improvise in this way.

Through music a person is able to express oneself in a way that goes beyond the conscious being. Through improvisation with others - in Therapist group - a real communication can begin.

The major assessment of music therapy is that the music being played is neither "good" nor "bad" . During a Music Therapy session whatever comes out of an instrument simply "IS" and, above all, it is a meaningful gesture. Even the simplest or the least pleasant one can be important to the therapist to understand what its meaning can be.

Nowadays, there are many situations when it is possible to apply Music Therapy and there are many different types of clients who turn to it.

Music therapy for artists

Among these new possibilities, I think that through Music Therapy , one can address artists' problems, their anxiety or tension caused by their stressful profession, and can be extremely useful especially for people whose problems are specifically connected to music itself.

Let's go for a moment to the meaning of the word "Performance". The root of the word is latin (per formare) and it is usually translated in "to shape", but could also be referred as "to bring out". "Per" literally means "through" and "formare" has several possible translations: to give a shape, a form, to organize, to educate, to create. To bring out some non-formed material and give it a shape.

This is exactly what happens during a therapeutic process. The person brings out what is inside his inner life and gives it a form.

But in music therapy the person does this process through music. This is what makes Music Therapy a unique way of helping musicians. Moreover, the music therapist who works with musicians, has to be both a skilled musician and a therapist with good knowledge of the psychological implications of the therapy.

Why should a musician need music therapy? Mostly because of a misunderstanding of the intention of the art.

Music therapy for musicians

Nancy, a professional singer came for some Music Therapy sessions. She had sudden laps of memory during performances and wanted to address this problem through music therapy. I chose to work through pieces of the Lieder repertoire and we started with Mozart's *Abendempfindung*. I chose that piece for the quality of the music, for the quietness and profoundity of the text, for the vocal range and particularly for the quality of the interaction between piano and voice.

She had first to 'sight-sing' the Lied so that the approach to the music was totally spontaneous and if there were any problems these could come out clearly. I imediately relized that she had a sort of blockage with a passage towards the end of the piece. For some reason she could not sing it correctly. We soon realized that this was not due to any technical difficulty . There was no rational explanation.

During the Music Therapy it became clear that this problem was affecting the whole of her singing. From the very beginning of the Lied, she was already thinking about the 'problem passage'. She couldn't enjoy singing. The quality of her voice changed and she didn't seem to care much about the piano accompaniment.

I called this a 'black hole' that was sucking out all the energies and ruining her partecipation in the performance. She couldn't enjoy it.

We worked on shifting the emphasis from the technical qualities of the piece (included the incriminating bar) towards the text and the musical quality. She realized the importance of cooperation, of working together towards one goal. She understood that her role was not the only important thing in giving a good performance. After this process her singing reached another level. Her voice was much more resonant, powerful, feelings were strongly perceptable. There were no more mistakes in the end.

We experimented with different kinds of work. The result was very satisfyig. She is performing now happily and she has no more problems with her memory. And if mistakes occur she doesn't worry anymore and they don't affect her whole performance.

Music Therapy, a discipline born and developed in totally different contexts, has a principal characteristic that makes it an important tool to help musicians to overcome their difficulties. The reason may be that at the very core of the therapy stands music itself . Music Therapy helps us change our misleading perception of music. Through a music therapy process, music, from being the cause of discomfort, can be brought back to its original place as a source of joy and well being. This can be achieved through a process (indeed, the therapy) in which music stands as the main carrier of healing.

Processes in music therapy relationship

Music Therapy can help physical relaxation, freedom from tension. Music Therapy can also help rediscover the expressive richness typical of a non pre-formed musical language.

Music Therapy can help a musician to discover his/her own spontaneous and personal music. The competitive element is put in its proper place and can become less stressful while leaving enough space for other aspects.

Through a music therapy process, the musician can

experience the fact that composed music is a most perfect moment of creativity, but that, at the same time, he is able to play something absolutely personal through improvisation which need not be 'good' or 'artistic', but simply authentic. We can say that it is very difficult to 'speak' through someone else's words', even the most perfect and beautiful ones, as we normally do when performing any composer's piece. First of all we must learn ' to speak with our own words'. During a music therapy process, the artist can be helped and supported in the realization that it is possible to discover one's personal music and not be judged for it or criticised . A major source for a healthy wellbeing is to get to know and accept oneself.

The artist can learn to cope with frustrations. If something has not come out as well as it should have been , it is not the end of the world. He/she can learn that "good" need not be "perfect" . What matters is its power of communication, it is creative, moving, and the artist and the audience are equally involved.

Technical or stylistic aspects can be studied and learned. The only thing that has to be 'good' is the feeling which brings us on another plan in our mind , body and soul. This feeling is ,perhaps, the only thing that has to be good and come out spontaneously and can be reached with great ease during music therapy.

The quality of the musical relationship that develops during music therapy allows the artist to become aware of the great importance of the human aspect in performance. The therapist and the client experience the feeling that every musical gesture is extremely meaningful. Not just from a purely musical point of view, but also as a sign of personal assertion.

"I am something, I am saying something to you, and I do this through my music. I feel that my music (me) is accepted and understood without judgement. Not only this, but I realize that my music can be influenced by yours and viceversa". This is communication and relationship.

Normally, during a performance, the audience does not play music in response to the artist's, but nevertheless the audience does participate actively in the performance. Music Therapy helps people become aware of this and not be afraid of it anymore. .

A Music Therapy process can help reach this point because it helps contact the human element without implications of judgment and because it shows, in a safe setting, what happens during the circuit of performance.

All this helps the growth of one's self-esteem. This happens because of the discovery of an intimate relationship with music and its communicative potential , giving more sense to the performance itself and not depending entirely on its success.

Last, but definitely not least, due to its nature of synthesizing music and psyche, freedom and consciousness, I think that Music Therapy has a great potential in the training of young musicians . Some elements of Music Therapy should be included both in the undergraduate and postgraduate Courses and these would assist in the PREVENTION of the many and stressful problems afflicting so many performers.

Group of music students

In the following paragraph, I'd like to share one example of a situation I have experienced recently. I was invited to a Conference on Music Therapy where I had to present a session to senior students at a Music High School a session on 'What is Music Therapy' and to illustrate the new approach I am developing using 'Music Therapy for Musicians'.

During the conference, two things became immediately clear:

1)the students were very interested in Music Therapy as an approach to musicians' problems

3)many of the problems that generally affect professionals and adults were already experienced by some of these students and several of them, quite talented indeed, were already thinking of giving up their musical studies.

The students, themselves, asked the Director of the High School to organize some music therapy sessions with me.

This happened late in the school year and close to the final examinations. I agreed to conduct several meetings with the students in their last year. The goal was to help the students face their examinations with a more relaxed attitude and find a new perspective on their music making.

We only had 3 meetings of 2 hours each. The sessions took place in a room with a grand piano.

At the first meeting, they expressed their wish to get rid of their instruments, but I had asked them to bring the instruments anyway. I told them that I thought the instrument should be present so that they could at least 'witness' the process in which their owners were involved. This somehow eased the tension regarding their instruments.

We worked first on ethnic instruments, mostly percussions. There were many reasons for doing this, and a most important one was because these instruments brought the young musicians together, joining in a spontaneous way of making music. I had to consider the little time available. We worked on these instruments during the session, and, by the end of it, I felt that they were ready for a first step towards classical western instruments. Strangely enough, none of the students was a pianist. I then suggested an improvisation which would start us from the drum then lead to the piano. This step was less traumatic than going directly to their own instruments.

The idea was simple. We improvised all together on one single big drum. This helped create the feeling of a 'group', the idea of sharing one common thing - music as a joy, not only as a problem - and finding a common vibration. I then moved to the piano and started accompanying them from there. Slowly, one by one, they joined me at the piano and we ended up with an improvised piano piece for 16 hands. Everybody was happy and felt relaxed.

At our second meeting, we worked on many different aspects and problems encountered in music making. We worked on the group, we worked on addressing difficult situations through the help of music via improvisation.

Towards the end of the session one of the students felt ready to join the group using his own instrument (guitar). We improvised with him. The others were still using ethnic instruments. They all admired the soloist and were very inspired.

At the third and last meeting, I felt that all the participants were ready for a first step towards their own instruments. I played a piece on the stereo which is quite important and symbolic: old music with a modern instrument improvising on top. I invited them to draw whatever the piece had suggested to them. They chose to do the drawing together. I then suggested they take the drawing and use it as 'our personal score' and we improvised on it. All of them, then, felt free to use their own instrument and we had our final improvisation in which everybody freely expressed the feelings that the experience had brought out.

The Music Therapy process was a great success both for the students and for the Institution. The few sessions we had helped to restore a state of serenity and freedom from tension.

I received spontaneous feedback from the students about what they had felt and how useful the experience had been for them. They told me that they have been using our experience as a way of relaxing before exams and concerts.

They also told me later on how important had been for them using memories of the music therapy experience as a guiding light in moments of difficulties.

None of them quit their musical studies.

Conclusions

These few ideas briefly expressed here are the result of some recent years of consideration and are just an outline of possible future studies. I think that the potential for work in this field is very high. I've spent the last few years working in this direction. I've been working both with professionals and with students, in groups or individual sessions and there have already been very interesting results. I think that there is a great need for trained music therapists with high musical skills who may support the development of this different approach to musicians' difficulties.

I hope I have shown that music therapy can be useful for professional musicians who are affected by their stressful career and can help them ease the tensions of the profession. I believe that the new approach underlined above can be useful for audiences who will be able to enjoy a performance on a higher level of communication and involvement.

Finally, I think that the greatest potential is to use this different approach and some music therapy skills to help music students to prevent those same difficulties while training for a professional career as performers or teachers.

"The Orpheus within can be nursed and nurtured so that our very own song can begin to be sung, so that our brief play may become more tuneful, and delight in its own resounding." [2]

[1] Bunt, L., *MusicTherapy, an Art Beyond Words*, Routledge, 1994, p. 6.

[2] A. Rooley, *Performance, revealing the orpheus within*, Element Books, 1990, p.4.

Musicians' Injuries: Aspects of Stress, Injury and coping, in relation to Health Promotion and Physiotherapy

Dominique Royle, MSc, MCSP, SRP, Chartered State Registered Physiotherapist

Introduction

Professional musicians are 'athletic musicians' (Paull, 1997), for they are as highly skilled and trained in precision movements, dexterity and co-ordination as professional athletes or dancers. Most performers have a strong sense of identity, closely associated with their performance. If they experience a career-ending injury, the implications can be devastating for them, for they face a loss of not only identity but also a sense of self and self-esteem (Altenmuller 1998, Koutoudakis, 1999, Sparkes 1998).

Some musicians are unable to return to performing professionally, others recover to varying degrees whilst there is a small but substantial group who recover and resume their playing careers. For these musicians, at some point along the spectrum of injury to recovery, it appears as if the wheels of despair arrive at a turning point and change direction; towards one of recovery and hope. Such events as a career-threatening injury, can act as major turning points or 'epiphanies'. Sparkes refers to Denzin's view of epiphanies as "...interactional moments and experiences that leave their mark on people's lives. They are often associated with moments of crisis that shatter a person's life and alter its fundamental meaning structures" (Denzin 1989, cited in Sparkes 1998, p5487). Moustakas refers to these as 'Symbolic Growth Experiences....for they create shifts in individual's attitudes of their sense of identity and selfhood which one grows from' (Moustakas, 1990, p99).

What factors were responsible for facilitating this turning point in musicians has been little explored, but gaining a better understanding of these factors could provide insight into how to help patients mobilise their own coping resources towards their recovery and rehabilitation.

One may wonder:

- At which point does the 'coping' process begin along the continuum from injury to recovery and when does a person start to mobilise their own resources towards their healing and recovery? Although the 'turning point' may be an event they were aware of, it may be that their coping skills had begun earlier than this point, possibly at a time when they thought that they were not coping.
- At what points along this continuum is a person receptive towards intervention and rehabilitation and at what stages could this intervention interfere or undermine a person's coping strategies?

This article considers these points, exploring two models of stress and coping and how these can be integrated into a health promotion model and physiotherapy intervention. This model focuses on the self-management and prevention of the playing-related problems incurred by musicians, which constitutes an integral aspect of my approach as a

physiotherapist working with musicians with playing-related problems.

What does 'health', 'stress' and 'coping' mean?

Many studies have observed that a person's attitudes, moods, experiences and abilities to cope, can influence their state of health and recovery from illness or injury (Pitts & Philpps, 1998, p64, Levleva & Orlick 1991). As stress and anxiety can undermine not only a person's auto-immune system, thus potentially increasing their vulnerability to ill-health (Klamer Moffat, 2000, p143, Pitts & Philpps, 1998, p64), but also their coping processes, many health psychologists consider stress and coping processes to be interrelated. (Lazarus, 1999)

First, what is meant by the term 'Health'? As health is defined not just in terms of physical health, but also mental, emotional, social, spiritual and societal health (Ewles & Simnett, 1999; p7), defining 'health' and 'ill health' is difficult (Sarafino, 1998, Harari & Legge, 2001). Most texts refer to the WHO's definition, stated in their 1946 constitution: "Health is...a state of complete physical, mental, and social well-being.... and not merely the absence of disease and infirmity" (cited in Harari and Legge, 2001, p2). Harari and Legge describe a person's state of health as being on a continuum. The traditional, Cartesian medical model implies that the mind had no effect on what happens to the body. However, this has been heavily contested and many now advocate a biopsychosocial model to understanding health; in that one cannot dissociate the body (biological systems), from the mind (psychological systems; cognitions, motivations and emotions) and social systems (family, friends, community, society). It is the interrelationship between all these factors that can cause a person's state of health to slide up and down this continuum (Harari and Legge, 2001, p2-3).

Several references discuss the effect of personality or emotions on a person's health (Klamer Moffat, 2000, p148, Lazarus 1999, p35). Sarafino suggests that people with high levels of anxiety, depression, anger or pessimism, which are all emotions and responses to stress, can be predisposed to various illnesses. How they cope with stressful conditions varies, and there is evidence that people who can overcome negative responses during an illness may recover more quickly. (Sarafino 1998, p11, Levleva & Orlick 1991).

A definition of stress is 'any factor that threatens the health of the body or has an adverse effect on its functioning.... The existence of one form of stress tends to diminish resistance to other forms' (Concise Medical Dictionary Oxford, 1985). In health psychology, stress is viewed from the following perspectives:

- a stimuli, which creates strains on the body.
- a physiological response to a stress.
- a process which involves a cognitive appraisal or transaction, i.e. a person's ability to interpret and respond by interacting and adjusting with the stressors/environment. For, as Sarafino (1998, P71) remarks; '...stress is in the eye of the beholder'. Grinkel and Spiegel stated that this 'appraisal of the situation requires mental activity, involving judgement, discrimination and the choice of activity, based largely on experience'. (1945, cited in Lazarus 1999, p72).

Lazarus' cognitive appraisal of a stressful situation, involves assessment in two ways:

- Primary appraisal; which evaluates whether or not the stressor threatens our being, in terms of harm, loss, threat, or challenge.
- Secondary appraisal; is focused on what can be done to cope with this.

For "...in any stressful transaction, we must evaluate coping options, which ones to choose and how to set them in motion" (Lazarus, 1999, p78-9).

What is meant by coping?

There are various definitions of coping. Put simply, it is "the effort to manage psychological stress". (Lazarus, 1999, p111). As Hardy comments, Lazarus views coping as a dynamic process "involving both cognitive and behavioural efforts to manage stress". (Hardy et al. 1996, p206). Yet, he criticises this model of coping for it "includes all attempts to manage stress regardless of their effectiveness" without considering coping outcomes. On the other hand Lazarus argues that the efficacy of each person's coping strategy depends on the their personality, the stage at which the stress occurs and "diverse life conditions" (Lazarus, 1999, P 73).

Lazarus' perspective of the coping process consists of two functions: emotion-focused and problem-focused, for he believes that coping and emotions cannot be separated. (Lazarus, 1999, p101). Hardy et al. comment succinctly, that as "the stress process is constantly changing; problem-focused coping is relied upon more when situations are amenable to change, and emotion-focused coping is relied upon more when situations are not amenable to change" (Hardy et al. 1996 p207).

Another model of stress and coping, which tries to understand why some people appear to cope better than others is Rotter's concept of 'locus of control', derived from social learning theory. This proposes that individual's possess predominantly an 'internal' or an 'external' locus of control, affecting the way they cope with stress and their health-related behaviour.

Individuals with an 'external locus of control' perceive that they have little control over what happens to them and what they can do about it. Therefore they tend to be fairly passive, seeking help from others. This type of coping has similarities to Seligman's concept of 'learned helplessness' in which the individual learns and adopts the role of a passive victim making little attempt to help themselves and so tend to be more dependent. (Sarafino, 1997 p106). Walleston et al's study in 1978 using the Multidimensional Health Locus of Control Scale questionnaire report a third group; that of the 'powerful others' locus of control; based on a person's belief

that other people are responsible for his/ her health, in either a negative or positive way. (Walleston et al cited in Harari & Legge, 2001 p16 & Sarafino, 1997, p108).

In contrast, those individuals with a perceived 'internal locus of control', attribute what happens to them and what they do about it as being within their control. They tend to feel responsible for their health and for doing things towards maintaining their health or recovering from an illness or injury (Pitts & Phillips, 1998, p115, Banyard & Hayes 1994, p60). This overlaps with Bandura's concept of 'self-efficacy' which emphasises that the more a person believes in their abilities to undertake an activity competently, the more likely they are to succeed, and so the greater their self-efficacy. They are more likely to overcome stress, illness or injury and take more responsibility for their rehabilitation (Sarafino, 1997 p105-108; Klaber- Moffat, 2000, p148).

How could these models be applied to the playing-related problems in musicians?

Compared to the well-established field of sports medicine and sports psychology research that of Performing Arts Medicine is relatively new. Many studies highlight the incidence of playing-related problems in musicians (e.g. Beijani et al. 1996, Wynn Parry 1998, Lockwood 1989). Perhaps, the most cited study is Fishbein et al's 'ICSM Survey' ^[1]

1 on the incidence of music-related injuries in 4000 instrumentalists in 48 symphony orchestras. 76% of respondents had experienced a medical problem during their playing career, severe enough to affect playing (Fishbein et al. 1988). Although some injuries are instrument specific (Tubiana 1993, Beijani et al 1996), many studies mention as contributory causes "...early exposure to high expectations of excellence, incessant demands for perfection, long periods of intense practice...." (Ostwald et al. 1994).

Many musicians come to accept aches and pains as a normal part of playing, abiding by the 'no pain, no gain' philosophy (Harrison 1997, chp.3) and tend not to seek help until symptoms become severe enough to interfere with their playing. (Grindea, 2000, p4-5). The problems most encountered, occur as a result of 'misuse and overuse', generally after a prolonged period of practice or performing (Wynn Parry, 1998, p33). Other frequently cited causes are: bad posture, infrequent rest breaks, more demanding repertory, change of instrument or teacher (Hagglund & Jacobs, 1996, p13- 14), and poor seating in orchestras (Paull 1997, p154-7). Overuse /over-training symptoms have been attributed to muscle fatigue (Wynn Parry 1998, p33). If they become chronic, secondary problems can arise as musculo-skeletal compensatory adaptations occur, to avoid painful positions, postures or activities (Klaber Moffat, 2000, p143). This occurs commonly in music students working under pressure to prepare for exams and auditions. Professionals musicians also are prone to developing problems, particularly if under stress (Wynn Parry, 1998, p101).

Coping strategies in athletes

There are many references sports psychology studies on coping strategies used by athletes to cope with the stresses of performance, competition and injury. But how transferable these findings are to musicians, many of whom are self-employed and who do not possess a coach, to guide and support them, is not known.

levleva and Orlick argue that if the "...needs of athletes are to be better met, the mental aspects of enhanced healing must be explored". They studied the psychological factors which could enhance athlete's recovery from sports injury, and discovered that the faster healing subjects were the ones who had a more positive outlook, perceiving themselves to have more control over their healing process. (levleva & Orlick, 1991). They found the following skills and activities:

- goal setting
- positive self talk
- mental imagery
- and belief

can help control anxiety and can also be used positively to "...increase effort, modify mood, control attention and aid the injury rehabilitation process. (Their findings)...support the capacity of the mind to take an active role in promoting personal healing" (levleva & Orlick, 1991, p25-40). These psychological coping skills have been used by others in rehabilitation programmes to enable athletes to "cope with the stress of being injured" (Weise and Weiss 1987, cited in Hardy et al 1997, p104, Gilbourne & Taylor, 1998, Suinn, 1997).

Health promotion in preventing musicians' injuries.

The term health promotion has been defined in broad terms. Naidoo & Wills describe the World Health Organisation's perspective as "the process of promoting health as not only involving political change and interagency collaboration, but enabling people to take more control over their own health and equipping them with the means for well-being.....it includes increasing individual knowledge about the functions and ways of preventing illness....." (Naidoo & Wills, p 87).

There are five main approaches to health promotion: 1) Medical; 2) Behaviour Change; 3) Educational; 4) Empowerment and 5) Social change (Naidoo & Wills, 2000, Ewles & Simnett, 1999, p43.). As a physiotherapist working with musicians with playing related injuries, an educational approach reflects more a physiotherapist's role in rehabilitating patients to regain their optimal function. It overlaps with the behaviour change model which aims to change people's behaviour patterns, to promote better health. However, the behaviour change approach differs in that 'experts' decide which are appropriate behaviours for health and then try to get people to change their lifestyles accordingly (Harari & Legge, 2001, p27). The educational model however, is more facilitatory in equipping people with the knowledge, information and skills, with which to make their own informed choices about any changes they wish to make (Naidoo & Wills, 2000, p97, Ewles & Simnett, 1999, p43).

A physiotherapist's intervention includes educating and motivating patients to make appropriate changes to their lifestyle to prevent recurrences and ameliorate symptoms. This involves educating patients about the self-management of their condition, facilitating them to regain a sense of control over their symptoms and independence (Klamer Moffat, 2001). Harding and Watson emphasise that "Education is a cognitive event: the giving of information which, it is hoped, will then lead to a behavioural change, with the application of new knowledge to relevant situations. (Harding & Watson 2000, p 620). Another important point made is that patients also need guidance to 'filter down' information e.g. from the media, internet and other sources, to help them to make the right

choices for any changes they make. For "...it is not possible to explain or inform until it is known what patients already understand; it is helpful to ask them what they know or think about their condition. Unless misunderstandings are corrected at an early stage, a therapist's plausible but conflicting explanation can seem complete nonsense to them" (Harding & Watson, 2000, p 622).

This is often the case for many musicians with playing-related problems, who at times have endured a prolonged and dispiriting road to recovery, seeking a wide range of differing therapies (Wilson, 1999, Norris, 1996)). Receiving at times conflicting medical diagnoses, treatments and advice, can further compound their problems and choices they have to make about suitable interventions(e.g. Harrison, 1997, chp.3).

Conclusion

Developing a greater understanding of how people access and mobilise their coping resources for promoting their own recovery and well-being, could enable more effective intervention programmes to be devised for musicians and other patients. These could incorporate some of the psychological coping skills used by athletes.

Procashka and Diclemente's studied how 'self-changers' made adaptations to their health behaviour. They observed that people consider, assess and psychologically prepare themselves for changes through different stages of : pre-contemplation, contemplation, preparation, action, maintenance and occasionally termination (Lawrence 1999).

Intervention programmes which facilitate people in making changes, could be flexible through these stages, to help patient's gain self-confidence, motivation and stamina, to sustain them through these changes, This could then minimise interventions which interfere and undermine their own coping efforts.

Petitpas et al. advocate that an ideal intervention programme for student athletes faced with career-threatening injuries, is one that "enhances their ability to not only cope through transitions but to grow through the experience" (Petitpas et al. 1996, cited in Sparkes 1998, p661). This could form the basis for physiotherapy programmes for not only musicians but for other injury and illness rehabilitation programmes.

*e-mail address for correspondence:
Dominique Royle dno@dial.pipex.com*

Footnote

[1] 1 International Convention of Symphony and Orchestra Musicians (ICSOM) Survey

References

- Altenmuller, E. (1998) Causes and cures of focal limb-dystonia in musicians, ISSTIP* Journal, (9) Oct. p13-16
- Beijani, F.J. Kaye, G.M. Benham, M. (1996) Musculoskeletal and neuromuscular conditions of instrumental musicians. Arch Phys Med Rehabil, Apr;77 (4): 406-13, abstract; PMID 8607768, UI: 96186392
- Concise Medical Dictionary 1985) Oxford University Press , 2nd ed.
- Ewles, L. Simnett, I. (1999) Promoting health, 4th ed. Balliere Tindall
- Gilbourne, D, Taylor, A (1998) From theory to practice: The integration of goal perspective theory and life development approaches within an injury-specific goal-setting program. abstract, Journal-of-Applied-Sport-Psychology. 1998 Mar; Vol 10(1): 124-139

Grindea, C. (2000) The Artist's Hand. ISSTIP Journal, p4-5

Grindea, C. (2000) The Phenomenon of "peak experience" or "the flow" in musical performance, ISSTIP Journal (10) Nov. p7-11

Harding, V. Watson, P. (2000) Increasing activity and improving function in chronic pain management, Physiotherapy, 86, 12, 619-630

Hardy, L. Jones, G. Gould, D. (1996) Understanding psychological preparation in sport: Theory and practice of elite performers, Wiley

Gould, D. Udry E. Bridges,D. Beck,L. (1997) Coping with season-ending injuries. Abstract. Sport-psychologist . 11(4), Dec 379-399

Haglund, K. Jacobs, K. (1996) Physical and mental practices of students as they relate to occurrences of musculo-skeletal injuries, Work, 6, p11-24

Harari, P. Legge, K. (2001) Psychology and health, Heinemann

Harrison, C. (1997) The Musician's Tale, Chpt 3 in The Athletic Musician, Paull, B. & Harrison, C. Scarecrow Press

Ievleva, L. Orlick, T. (1991) Mental Links to enhanced healing: An exploratory study. The Sports psychologist, 5, 25-40

Johnson, U. (1997) Coping strategies among long-term injured competitive athletes. A study of 81 men and women in team and individual sports Scandinavian journal medicine and-science in sports Copenhagen.7(6); 367-372

Klaber Moffat , J. (2000) Pain perception and attitudes, in Topical issues in pain: biopsychosocial assessment and management, ed. Gifford, L. CNS Press

Koutsiakis, Y. Sharp, N.C. (1999) The Fit and Healthy Dancer,Wiley

Lawrence, T. (1999) A stage-base approach to behaviour change. In Evidence-based health promotion, Perkins, E. Simnett, I. Wright, L. John Wiley and Sons

Lazarus, R.S. (1999) Stress and emotion, a new synthesis, Free Association books

Oxford University Press, (1985) Concise Medical Dictionary

Lockwood, A. (1989) Medical problems of Musicians,New Engl, J Med. 320(4),p221-27

Moustakas, C. (1990) Heuristic Research, Design, Methodology and Applications, Sage Publications

Naidoo, J. Wills J. (2000) Health promotion; foundations for practice 2nd ed. Balfiere Tindall.

Norris, R. (1996) Return to playing after injury: strategies to support a musician's recovery, Work, 7, p89-93

Ostwald, P.F. Baron, B.C. Byl, N.M. Wilson, F.R. (1994) Performing Arts Mmedicin West J. Med, Jan;160 (1),p48-52

Paull, B. Harrison, C. (1997) The Athletic Musician, Paull, B. & Harrison, C. Scarecrow Press

Sarfino, E. (1998) Health psychology:biopsychosocial interactions, 3rd ed. John Wiley & Sons

Sparkes, A. (1998) Athletic Identity Qual. Health Research, 89(5), p644-664

Suinn, R (1997). Mental practice in sport psychology: Where have we been, where do we go? Abstract . Clinical Psychology:Science and Practice. 4(3): 189-207

Toubiana, R. Chamagne, P. (1993) Occupational arm ailments in Musicians ,Bull Acad Natl 177,(2),p203-12, abstract, PMID: 8353774, UI: 93358244

Toubiana, R. (1998) Functional Anatomy And Physiology: Some Basic concepts on the physiology of movements, ISSTIP Journal, (9), p9-12

Wilson, F. (1998) Glenn Gould's Hand, ISSTIP Journal 9, p5-8

Wynn Parry, C. (1998) The Musician's Hand: a clinical guide Ed: Winspur, I. Wynn Parry C. Martin Dunitz

Musicians' experiences of a career threatening, playing-related injury, their recovery and return to performing

Dominique Royle, MSc

*Submitted to the University of Exeter as a Dissertation towards the degree of Master of Science
by advanced study in Health Care – April 2002*

Abstract

Compared to the well established fields of sporting and dance injuries, there is little research on musician's injuries and specifically their experiences of injury and recovery.

Objectives

The purpose of this qualitative study using in-depth interviews on a small sample of musicians, was to explore their experiences of a career-threatening, playing-related injury and what aspects they perceived were significant in their recovery and return to performing.

Methods

8 professional musicians, (5 guitarists, 2 cellists and one viola-player) who had sustained a career-threatening, playing-related injury and subsequently recovered, consented to be interviewed. A semi-structured format was used. Audio-taped interviews were transcribed and analysed using a phenomenological framework.

Results

Five common themes emerged. The main one was that participants' injuries were not adequately resolved by therapeutic interventions. In their search for a resolution, they all developed a greater understanding of contributory factors to their injury, and how they could help themselves. Findings suggest that a significant process of their recovery was that through developing a greater understanding they were better able to address and overcome those issues causal to their injury. The musicians' perceptions were that despite not all of them making a full physical recovery, they all nevertheless made a good recovery in other respects, eg. becoming better players, musically. Gaining greater insights enabled them to make positive changes to their attitudes to music, to playing and to aspects of themselves. Recovery for all of them, encompassed a dimension wider than the healing of a physical injury. It became a process far outlasting any intervention period, spanning several years, implying that perhaps the concept of recovery could be further explored and widened. Most studies reviewed, highlighted the paucity of research into the psychological components of recovery, suggesting that this approach be the subject for further objectives studies.

listening to musicians – responding to their needs

For people in the music business there is always help at hand from the Musicians Benevolent Fund

- Help with stress and health problems
- Help and advice with financial problems
- Help that's given in strict confidence
- Help given to outstanding young musicians

We operate throughout England, Scotland, Wales and the whole of Ireland and have recently taken over the responsibilities of the Scottish Musicians Benevolent Fund

If you or someone you know needs our help, please contact:

Musicians Benevolent Fund
16 Ogle Street
London W1W 6JA

Telephone: 020 7636 4481
Facsimile: 020 7637 4307

email: info@mbf.org.uk
website: www.mbf.org.uk

